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ABSTRACT

Since its establishment in 1978, Thailand's Sukhothai Thammathirat Open University (STOU) has attracted world-wide attention for its innovative, multimedia approach to distance education and for its varied assortment of degree and non-degree programs. Four articles by Dr. Wichit Srisa-an, the founding rector of STOU, are presented in this volume: (1) "Higher Education Development in Thailand" sets the establishment of STOU in historical perspective and traces the expansion and consolidation of Thai higher education; (2) "Distance Education through Multi-Media" surveys the strengths and weaknesses of various media and discusses the media mix currently employed by the university; (3) "The Distance Teaching University: The Case of Sukhothai Thammathirat Open University" touches on some of the problems facing the fledgling university and raises several issues vitally important to any distance university, e.g., intended audience, appropriate teaching/learning system, and maintenance of high academic standards; and (4) "The Management and Economics of Distance Education: The Case of Sukhothai Thammathirat Open University" (written jointly with Tong-in Wangsotorn) gives a detailed description of the university, including its administrative and academic structure, course production methods, programs offered, enrollment statistics, and cost effectiveness. (MES)

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Sukhothai Thammathirat Open University

Distance Education: The STOU Approach

by

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Preface

In the eight years since its establishment in 1978, Sukhothai Thammathirat Open University has attracted world-wide attention for its innovative, multi-media approach to distance education. Under the dynamic leadership of its founding Rector, Dr. Wichit Srisa-an, the university has captured the imagination of the Thai people and the educational world at large by its varied assortment of degree and non-degree programs. These programs have enabled adults to have a second chance at higher education, have allowed civil servants to upgrade their qualifications, and have disseminated knowledge to the public at large.

As STOU's reputation has grown, Dr. Wichit has been in increasing demand as a speaker at international conferences, where he has articulately expressed the achievements of STOU thus far while never seeking to shy away from the inevitable problems that accompany such a bold, new adventure. It was felt that if several of Dr. Wichit's papers were collected together in a single volume, it would provide a provocative, insightful overview of distance education generally as well as an in-depth analysis of the case of STOU in particular.

The four articles presented in this volume were originally presented at conferences and subsequently published. They have been updated and revised slightly for this present publication, but the substance of the articles remains as originally written. The first article, "Higher Education Development in Thailand," sets the establishment of STOU in historical perspective and traces the expansion and consolidation of Thai higher education. The second article, "Distance Education Through Multi-media," surveys the strengths and weaknesses of various media and discusses the media mix currently employed by STOU. The third article, "The Distance Teaching University: The Case of Sukhothai Thammathirat Open University," touches on some of the problems facing the fledgling

university and raises several issues vitally important to any distance university such as intended audience, appropriate teaching/learning system, and maintenance of high academic standards. The final article, "The Management and Economics of Distance Education: The Case of Sukhothai Thammathirat Open University," gives a detailed description of the inner workings of STOU – its administrative and academic structure, course production methods, programs offered, enrollment statistics, and cost effectiveness.

Taken together, the four articles provide a clear, candid picture of developments at STOU as well as a searching, philosophical analysis of many of the larger issues currently facing distance education. Dr. Wichit is the first to print out that there is no single "model" of distance education that can be transported across cultural and linguistic boundaries and replicated in its entirety. Yet, at the same time, the experiences of pioneers in the field should not be ignored; for in planning a new institution or modifying an existing one, valuable lessons can be learned from those who have embarked on a similar path. It is thus with the hope that these articles can be of some benefit to those in the field of education generally – and to those in distance education particulary – that they are presented for your consideration.

Vanchai Sirichana
Director, STOU Press

Higher Education Development in Thailand

Wichit Srisa-an

Introduction

The National Scheme of Education of Thailand, effective since 1977, has defined "higher education" as "education after secondary education." Therefore, post-secondary educational institutions at all levels and categories are a part of higher education. Institutions of higher learning are of two types: governmental and private. Both are under government supervision since the provision of education is the function of the state. The government may delegate the sharing of this responsibility to the private sector, but the control remains with the government.

Today there are 16 government universities and institutions in Thailand. They comprise 14 traditional universities, an open-admission university and a distance teaching university. There are also 21 degree-granting private universities and colleges. Both government universities and private institutions are under the jurisdiction of the Ministry of University Affairs. Each university is given the status of a government department within the Ministry, and university teachers are civil servants receiving salaries and fringe benefits equivalent to those of civil servants in other government departments and ministries. In addition, approximately 264 degree-granting institutions and non-degree post-secondary colleges operate under the supervision of the Ministry of Education, the Ministry of Public Health, and other ministries as shown in the table on the following page.

The analysis of the relationship between higher education and development in Thailand will be confined to "university"-type education. Universities in Thailand are comparatively more comprehensive in both program offerings and major functions than other types of higher education institution. Whereas universities are engaged in such major functions as teaching, research, community services, and cultural preservation and promotion, other education institutions normally emphasize teaching solely for the purpose of producing graduates.

This article was presented at the Japan Society for the Promotion of Science (JSPS) – Thailand Seminar in Hiroshima in 1980, and was first published in the Proceedings of that Conference. After subsequent amendment and revision, it was selected for publication in the Bulletin of the UNESCO Regional Office for Education in Asia and the Pacific, No. 24, April 1983.

Like the other nations of Southeast Asia, Thailand is experiencing a period of constantly accelerating diversification and growth in its institutions of higher education. The need for such change was initially stimulated by the manpower requirements and social attitudes which followed the Second World War, and then skyrocketed when the Southeast Asian conflict precipitated a vortex which drew the latest foreign technology into Thailand at a rate almost too fast to permit assimilation. As attention from abroad started local industries spiralling, the urgent need for specialists in certain fields which had scarcely existed before 1960 became an issue that is probably familiar in all countries in the area.

Classification of Higher Education Institutions

Support \ Control	Ministry of University Affairs	Ministry of Education and others
Government	**Government Universities** 11 universities 5 institutes	**Government Colleges** **Ministry of Education** 1 College of Technology and Vocational Education with 29 campuses 78 Technical Colleges 34 Vocational Colleges 45 Agricultural Colleges 36 Teacher Training Colleges 17 Physical Education Colleges 10 Dramatic Arts Colleges 1 Fine Arts College **Ministry of Public Health** 21 Nursing Colleges **Government Specialized Institutions** **Other Ministries** 4 Military/police academies 2 Military/police nursing schools 10 other ministries' schools 1 Nursing College under Bangkok Metropolitan Administration
Non-Government	**Private Institutions** 4 universities 17 private colleges	**Private Specialized Institutions** 1 Nursing College of the Bangkok Seventh Day Adventist Hospital 2 Buddhist Colleges 1 Asian Institute of Technology

Although it was accomplished under enormous pressure, post-war high-level educational development in Thailand did not start from scratch, nor did it lack organization. Even the most recent policies have evolved from a tradition which can be traced directly back to the foundation of the country's first university, Chulalongkorn, in 1917. The task of Thai educational planners and administrators has been, therefore, not only one of funding and staffing the "flash-flood" of new degree-granting institutions, but also of controling and consolidating them into a form reconcilable with the system of education which has grown along with Thailand's modern culture and economy for more than half a century. Only in such a way could a sense of continuity and national identity be preserved in arranging to meet the educational and manpower needs triggered by new concepts of industry, technology, and management in modern Thailand.

Historical perspective

Thailand's first universities were founded exclusively to provide skilled personnel for government service. By the time Chulalongkorn University achieved its status as a university by Royal Decree in 1917, it had already existed since the end of the previous century in a series of embryonic forms, such as the Royal Pages' School and the Civil Service College.

Until well into the post-Second-World-War period the growth of Chulalongkorn University correlated with steps taken for modernization by the Government. Expansion of the curriculum occurred only when specialists were needed in areas not covered by existing educational facilities. Students desiring knowledge in fields of study beyond the compass of Thai university curricula for reasons unconnected with government work comprised a tiny elite who pursued their education abroad.

Immediately after the revolution of 1932, which transformed Thailand from a monarchy to a democracy, there was a need for government officials trained in the techniques of democratic government. In response, the University of Moral and Political Science (Thammasat University) was established in 1933 to provide the training necessary to produce political leaders and civil servants of the new type.

Total affiliation between the Government and the universities underlay the foundation of three more institutions in 1942: the University of Medicine (Mahidol), the University of Agriculture (Kasetsart) and the University of Fine Arts (Silpakorn). Once again the function of these institutions was to provide government personnel trained to a high-level of competency in their respective disciplines and professions. Thus by the end of the Second World War five universities had been established in Thailand and although their specialization may be called into question, their status as universities and their combined function as an organized system of higher education cannot be denied.

After 1945 this system became the foundation of a new era of controlled development that may be the most intense ever experienced anywhere. As the media and transportation

facilities which had been developed to vastly increased levels of efficiency by the needs of the war began to homogenize world culture, the previously rather hermetic traditions of Thailand were brought into forceful contact with progressive western methods. The university educational system as it stood became obsolete, geared as it was to the needs of the pre-war Government.

As advisers began to pour in from abroad, the cry went up from private industry for experts trained in areas of technology previously unheard of in Thailand. With the coming of the Indochina War in the early 1960s and its subsequent escalation, this process of adaptation and diversification became so frenetic that a series of five-year development plans was put into action to help steer it towards the fulfilment of burgeoning manpower and research requirements. The forces affecting development of higher education had completely shifted. Before the war the university functioned as a training ground for government personnel; now the developments of the post-war decades catapulted it into the role of supplier of specialized manpower to both public and private sectors. Consequently, it became the most important force in national development.

Recrystallized social demands began, for better or worse, to place university education in a seductive light it had not previously enjoyed. This phenomenon, observed by Ivan Illich,[1] made high-level education the ultimate status symbol, dividing those who had "made it" from those who had not. The number of high-school graduates demanding access to higher education rapidly increased.

By the late 1960s and early 1970s, institutions of higher learning organized around specialized areas of learning were opening at the rate of almost one a year, along with more diversified institutions being founded for the first time outside the capital city of Bangkok. Chiangmai University opened its doors in 1965, to be followed by Khon Kaen University (1966), The National Institute of Development Administration (1966) and Prince of Songkhla University (1968). In 1969 a law was passed permitting the establishment of private colleges of advanced learning, for the first time. Despite their having no financial support from the Government, these private colleges and universities organized their curricula to satisfy manpower requirements by emphasizing technical and business studies, thus illustrating once again the importance of manpower demands as the chief force behind educational development in Thailand.

The concept of the Open University made its debut in Thailand with the inception of Ramkhamhaeng University in 1971. Ramkhamhaeng University makes higher education available to students who, for either financial, geographic, or academic reasons, have no access to the country's selective-admission universities. As an academic market university, Ramkhamhaeng University adopts an open admission approach to classroom activities where

[1] Illich, Ivan D. *Deschooling Society*. New York, Harper and Row, 1974. 116 p.

attendance is optional. By 1979 student enrolment had reached 110,000, and a second campus was required.

To allow Ramkhamhaeng University to restrict the number of students and at the same time to provide broader educational opportunities to working adults, the Thai Government in 1979 established a new open university called Sukhothai Thammathirat Open University. This new university has no conventional classrooms and has adopted the distance teaching and learning system. The teaching and learning process depend largely on integrated media, correspondence, radio, television and tutorial services at various study centers located throughout the country. It is open learning based on the principle of lifelong education. The idea has been advanced, for example, that the Open University might provide the ideal answer to the country's crucial need for a "second chance" education. Working professional people would accordingly be able to update their knowledge and upgrade themselves by enrolling in courses which would not conflict with their work schedules. Others, forced to interrupt their studies to seek employment, would be able to continue to study in their own time.

The present situation

Although Thai university education is now approaching the point where it can be considered favorably in quality and scope by international standards, there are still many obstacles that pose severe problems to administrators working in the field of educational planning. As the central agent of national development, the university is being called upon to meet manpower requirements that would have been unimaginable a decade ago. Computer science, agro-industry, solar energy, and appropriate technology are just a few of the dozens of areas of knowledge that have shifted from the periphery to the center of concern. Thailand has far too few specialists in most of these fields. Before the country's universities can fulfil their basic functions of research and dissemination of knowledge, the crippling shortage of staff, funding, and facilities must be alleviated. Although these needs are most pressing in the regional institutions, even the best endowed of the universities in Bangkok are severely handicapped by these drawbacks.

The series of five-year development plans initiated in the 1960s aimed to foster controlled expansion and focus it directly into those areas considered critical in relation to national development. The first two Educational Development Plans were oriented directly towards economic development, with the object of providing high-level manpower. The Third Plan, at the request of the universities, placed a greater emphasis on research and social and cultural development in addition to supplying high-level manpower. Institutes for Population Studies, Thai Studies, and Computer Science were established in several universities under the provisions of this Plan. The Fifth Plan, currently in effect, aims to strengthen manpower production, research, community services, and cultural preservation and promotion.

To date the plans have been largely successful in channelling educational expansion to the national advantage. There have been miscalculations – as is inevitable when long-range forecasts must be taken as the basis for policy-making – resulting in overfulfilment of certain formerly pressing manpower demands. At present, for example, more graduates in social sciences and humanities have been produced than can be absorbed. But the advantages of the plans greatly outweigh the mistakes, and the Educational Development Plans have so far been a qualified success.

Problems and prospects of expansion and consolidation

As should be evident by now, most innovations in the Thai higher education system have been in the direction of expansion, as consolidating measures have been more or less built into the policy of allowing university growth to follow the lines of the existing system. Most of the problems that have been encountered in the post-war boom have been solved by exercising selectivity and control over logical extensions of this system. Still, the almost total specialization of most of Thailand's universities which extended into the decade after the war suggested that the effectiveness of the system, and its capacity for accelerated growth, would be strongly enhanced by consolidation.

This need was diagnosed by Sir Charles Darwin when he visited Thailand under the auspices of UNESCO in 1954. After discussing the unsuitability of the word "university" when applied to such specialized institutions as the University of Fine Arts and the Medical University, and lamenting the lack of a shared set of standards among Thailand's five universities, Sir Charles speculated:

> The best way of reforming the institutes of higher learning in Thailand will be to adopt a general pattern like that of London. The five universities should be called colleges and combined into a single federal university like the University of London, though there is no need to follow the details of its construction exactly. As long as Bangkok is the only strong center of learning in Thailand – and merely on account of the shortage of suitable staff this must certainly be so for many years – there is no need for a second body like the University Grants Committee to exist separately, since the governing board of the university could fulfil both function. [2]

Although its recommendations were not followed exactly, the report exerted a strong influence on government university policy. The five universities were not grouped together into a single institution; instead, in 1959 they were put under the direct control of the Office of the Prime Minister. Under this arrangement, teaching and academic standards were aligned and the stimulation and control of growth more effectively achieved.

[2] Darwin, Charles, Sir. *Report to UNESCO on science in Thailand*. Paris, UNESCO, 1954. p. 31

The next major official consolidating effort was made in 1972, with the setting up of the Office (now the Ministry) of University Affairs. The close co-operation made possible through the establishment of this Office produced a "family of universities" that is very much in the spirit of the improvements envisioned in the Darwin Report. The Office of University Affairs fulfilled for the first time the need for a single consolidating agency which permitted the universities themselves to have access to the Cabinet.

Another co-ordinating measure is the bi-monthly Rectors Conference which facilitates communication among the 14 currently existing state universities by giving the rectors of these institutions an opportunity to exchange ideas and discuss problems. The conference does not intrude into matters of specific concern to one particular institution; its distinguishing feature is its limitation of discussion to issues of common interest to the member institutions.

Finally, joint research projects, co-operative programs involving such procedures as faculty exchange, a common academic calendar, the sharing of certain facilities, and student cross-registration, all play roles in consolidating the higher education system.

Conclusion

In the past two decades, higher education in Thailand has expanded rapidly. Initially the "manpower approach" was the main theme of expansion. In the last decade, the desire of the people to receive educational opportunities has greatly increased. This has resulted in the universities finding ways and means to meet their educational desires with rather limited resources. The "approach" adopted was a cross between the application of the "social demand approach" and the "manpower approach." The important problem was to find an "ideal" balance between the two approaches.

Comparatively speaking, restricting the number of students in the selective-admission universities to conform with manpower requirements is less difficult to implement than carrying out the same restrictive measure in open universities – sometimes virtually impossible in the latter case. The problem of unemployment will become more intensified for graduates from both conventional and open universities in the same fields of study. One possible solution, however, is to restrict the admission to Ramkhamhaeng University at a decreasing rate and, at the same time, offer distance learning as a continuing education opportunity for the masses as a part of "to learn and to live" under the adult education program.

Though Thai universities legally have teaching, research, community services, and promotion and preservation of national culture as their main functions, in reality, they are the supplier of high-level manpower more than anything else. Perhaps the universities should play a more active role directly related to national development and become a "knowledge industry" to foster academic advancement. The resultant progress in technology should act as a stimulating factor in the development of the manpower and most important, the "brain power" of the country. The universities have received the blessing of the Government to inten-

sify and expand their efforts in the four stated basic functions to fulfil national development needs more effectively. It is hoped that higher education in Thailand will be more development-oriented in the years to come.

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Distance Education Through Multi-media

Wichit Srisa-an

Introduction

A common educational problem of developing countries is the inequality of educational opportunity. This means that only a minority have the chance to study above the legally-required minimum level. The higher up the educational ladder one goes, the fewer the opportunities for further study. While the educational needs of the people grow increasingly greater, the capability of developing countries to meet these needs for higher education remains limited. This is because resources are limited, and these limited resources must be poured into other areas of the country's development. This causes the quantitative and qualitative development of the people in general to be out of harmony with the country's overall development even though, in fact, the quality of human resources is the most important factor in a country's development.

In developing countries, human resource development is of crucial importance. Such development not only increases the quantity of trained manpower in response to national needs, but it also improves the quality of life and work for people generally. As human resources are developed, rising expectations are engendered in the people for further education. But opportunities for education at the highest level are limited because resources are limited. Under these conditions of scarcity, inequality of educational opportunities naturally arises. Such inequality can be erased only by efforts to democratize education. Thus various models and methods must be explored to make higher education truly education for the masses. But it is essential that these approaches be economical and efficient so as not to exceed limited resources.

In the past decade many countries in Asia have extended the range of educational opportunities by adopting the open education system and setting up, for this purpose, higher educational institutions of distance teaching and learning. Pakistan's Allama Iqbal Open University, Sri Lanka's Open University, China's Central Broadcasting and TV University, Australia's Deakin University, Japan's University of the Air, Korea's Correspondence Univer-

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sity, Indonesia's Terbuka Open University, India's Indira Gandhi National Open University, and Thailand's Sukhothai Thammathirat Open University – all these institutions of distance teaching, despite their individual characteristics, do indeed have one aim in common: to serve the needs of adults seeking to upgrade professional qualifications and/or to acquire a real understanding of the subjects chosen. At present, a large number of countries in the developing world, especially those in Asia, have expressed a great interest in providing higher education through distance teaching systems. It is to be expected that other distance teaching institutions will be established in many countries in the near future.

In the past, whenever there were extensive educational reforms, the causes usually cited were social changes, academic and technological advances, or even political influences. It is true that the aforementioned items might well have been the stimulus or impetus for the educational changes. However, if a more profound analysis is made, it will be found that the factor having the greatest influence on the changes and serving as an important basis for the use of new methods in the field of education has been "the conceptual factor" which administrators and educational personnel have adopted as their guiding principle.

One of the concepts which has most influenced the provision of education in the present age is the concept of *lifelong education*, and education is, of course, an important factor throughout one's life. It is a process and an activity which concerns people from birth to death. Education according to this concept must meet the needs of society and of individuals of all ages and categories. There must be models and methods of providing education which foster learning for both young people and adults – both formal and non-formal. The concept of lifelong education in the past decade has become a firm belief which has influenced education in various countries throughout the world.

If the concept of *lifelong education* is considered in its social aspect, it is generally accepted that today's society is a learning society. By this I mean that for a person to adjust successfully and contentedly to a rapidly changing society such as today's, he must ensure that his learning is constantly up-to-date. Continuous learning thus facilitates the leading of a successful life, and a member of society who wants to get ahead must make use of various types of education. Modern technology has become an important vehicle in providing lifelong educational activities. In the modern age there is thus a merging or coming together of the learning society and the technological society. Various social institutions, apart from educational institutions that impart knowledge to school-age children, have an important role to play in providing various types of education for young people and adults. The home, church, and many types of public and private agencies – including mass media institutions – have been stimulated to play an ever-increasing role in improving the quality of life of the people.

Adopting the concept of lifelong education as a principle in providing education has resulted not only in the expansion of the scope and manner of such provision, but also in the development of many new educational methods. Of particular importance has been the estab-

lishment of open education using the distance teaching and learning system, which has been expanding rapidly in various countries throughout the world.

In general, the educational systems with which we are familiar usually can be characterized as "closed education," closed in three senses, namely:

1. Limited student enrolment – that is, the number of students admitted is limited to those who can be accommodated in terms of the number of desks, teachers, buildings, and supplies. This is because the students must come to study in a specifically designated place. Since there is a need to limit the number of students, this type of educational institution ordinarily looks for a selection process which will ensure the number of quality students that it can accommodate. This in turn leads to the condition of limited opportunity, and perhaps has an effect on the equality of educational opportunities if the selection process is not correct and appropriate.

2. Structural limitations – that is, the process and structure of this type of educational system is ordinarily fixed fairly rigidly. It is difficult to provide learning activities which will satisfy individual needs and allow for individual expression, and there is very little flexibility and facility in the entire educational process.

3. Limitations concerning the learning environment – that is, teaching and learning are ordinarily limited to the classroom or lecture hall. Thus the learning environment is usually limited to the confines of the educational establishment itself, with the relationship between the teacher and students in the classroom being the most important consideration.

Open education featuring a distance teaching and learning system, on the other hand, could be considered "expanded education," in that it seeks to expand educational opportunities fairly and to the greatest extent possible. This alleviates the problem of limitations regarding the process, structure, and learning environment. Instead of using a conventional classroom with a teacher as the center of teaching and learning, open education emphasizes various types of educational media, which result from the application of advanced knowledge or technology to education. The intention is to have the students study to the fullest extent on their own without having to enter a conventional classroom. An important factor in open education at whatever level is *instructional media*, which is one component of educational technology.

In the past, there have been different experimental approaches to open education featuring various types of instructional media – both single media and mixed media. The first well-known approach was correspondence education, in which teaching materials were sent by mail directly to the student's home. It was believed that printed materials were the most efficient instructional medium. If the materials were well written and organized and appropriate techniques were employed, the student could study by himself with very little or indeed no direct assistance from the teacher. Correspondence education has thus been an important

medium for expanding educational circles, extending learning opportunities, and destroying barriers to learning, thereby making open education available to ever greater numbers of students.

With the advent of radio broadcasts, another medium was applied to the field of education. Radio broadcasts were used not only to supplement conventional classroom instruction, but also as a medium in open education as well. Schools or educational institutions of the air were established which broadcast radio lessons directly to the home. In some instances radio broadcasts were used in conjunction with correspondence education; in other cases the broadcasts were used as a single medium of instruction. An important development in the field of instructional media occurred when television was applied to education. Telecasts can be considered a highly effective instructional medium, for there are pictures as well as sound. The subsequent introduction of color TV has further enhanced the effectiveness of this medium in many countries.

Research conducted both within and outside Thailand concerning the effectiveness of different types of media has indicated that each particular medium has its strong and weak points. The exclusive use of one medium is not likely to be completely effective. The use of the traditional classroom with regular interaction between the teacher and students is highly effective but can be used to only a limited degree, and it may not be appropriate for certain age groups. Printed materials, while obviously nothing new, can still be an effective core medium for those who can read and write. Radio and television can effectively spark student interest, but the student must pay very close attention to the programs and tune in on time or the lesson will simply pass him by. Of course, the programs can always be taped for subsequent review at the learning speed of the particular individual, but this can be fairly expensive. Open education at present has thus turned to the use of *mixed* or *multi-media*, instead of the exclusive use of one single medium. That is, printed materials, electronic media such as cassette tapes and video-tapes, and radio and television broadcasts have been combined in a mixed media system, with one medium serving as the core medium and the other media serving as supplementary media. This is done in order to make teaching and learning more effective and interesting. Thus we might say that the use of "multi-media" has been "multi-beneficial" in terms of increasing the prospects and the effectiveness of distance education.

DISTANCE TEACHING SYSTEM

Distance teaching means quite simply that the students and teacher are at a distance from one another, with little opportunity for face-to-face contact. They are, however, able to have joint educational activities through the use of various instructional media geared to facilitate learning on the part of the students. The bulk of this learning arises from self-study, at times and places convenient to the students. Distance teaching thus involves the communication of knowledge, attitudes, and skills to learners in such ways as to enable them to acquire and extend them into the conduct of their everyday lives. Since communicating the above-mentioned items is the prime objective, this communication must be as efficient and effective as possible within the constraints of existing resources. In general, the criteria for determining the efficiency and effectiveness of distance teaching involves analyzing the extent to which learners have achieved the learning objectives set by the curriculum or by themselves. Ideally, an effective distance teaching system should ensure that the students find the learning experiences stimulating, interesting, enjoyable, and relevant to their aspirations and lifestyles. Thus the effectiveness of distance education depends to a large extent on the quality of the instructional media and delivery systems.

The selection and development of instructional media appropriate to the conditions of individual societies is thus an important problem. Factors to be considered in media selection include the following:[1]

1. Availability

It is essential that the chosen instructional media and delivery systems be technologically practicable; that is, the technology to be used in the individual societies must have been adequately developed, and there must be sufficient manpower to make continued use of the technology.

2. Accessibility

The instructional media and the delivery systems to be used must be accessible to both the distance teaching institution and the learners. For example, if television is chosen as an instructional medium, not only must there be appropriate and adequate air time; but also the students must have TV sets capable of picking up the programs.

3. Acceptability

The instructional media must be accepted both by the teachers and the students. This concerns the aptitudes and attitudes of both groups with respect to certain types of media. If the teachers or students are not skilled in the use of a particular medium, it is not likely to be very effective.

4. Validity

The instructional media must be appropriate for achieving the objectives of the

learning materials. Care must be taken to choose media which are suitable for the content or subject matter one wishes to convey.

5. Economics

The instructional media must not be overly expensive. This will involve considerations of economies of scale and cost effectiveness.

Once development of distance teaching systems is undertaken in various countries based on the criteria just mentioned, there are two major approaches which can be followed, namely:

1. The Uni-Medium or Single Medium System – This is the distance teaching system which has long been used in correspondence education. Printed materials will generally be used as the core medium, but this approach can involve the exclusive use of any single medium, such as radio or television broadcasts. The extramural studies programs of various universities in Australia which use printed materials exclusively are a good example of the Single Medium System.

2. The Multi-Media or Mixed Media System – This is the distance teaching system developed later, most particularly in the period when electronic media came to be used more widely in the field of education. The multi-media system ordinarily employs one medium as the main or core medium with other media playing a supplementary role in order to bring about a more interactive format. Printed materials or print media are generally used as the core medium, with electronic media such as radio, TV, audiocassettes, videotapes, etc., serving as supplementary media. Most open universities employ the multi-media system and feature printed materials as the core medium. This is true of the Open University in the U.K. and Sukhothai Thammathirat Open University in Thailand.

In fact, the development of instructional media for self-study in the form of mixing printed materials with other media actually occurred on a widespread scale even before the advent of the open universities. One well-known example of the mixed media approach is Linguaphone, which developed language lessons combining printed materials with records and, subsequently, tapes to teach language skills. Mixing of just these two media improved the effectiveness of language teaching and enabled students to study on their own. With advances in electronic technology, many different media could be mixed together and used in the transfer of knowledge. This led to an even more effective use of instructional media.

Regarding the media used for distance teaching and learning, a survey conducted by the International Centre for Distance Learning of the United Nations University [2] found that many institutions used several different methods – correspondence, telephone, radio, TV, audio, video, study center, and so on. As correspondence is by far the cheapest method of communicating at a distance, only 27 out of 468 programs do not use correspondence as one of the methods. Of all the distance-learning institutions, 29 percent use only correspondence, particularly in Western Europe and North America.

The results show quite remarkable differences between regions. The telephone is used as a teaching method by more than a quarter of the programs in North America, Western Europe, and Australasia, but is hardly used in Africa, Asia, or South and Central America. Radio and television show a similar picture. Both are used worldwide to roughly the same extent, but whereas the use of radio greatly exceeds that of television in the developing world, television is much more popular than radio in North America. This almost certainly is due to the penetration of the media.

The cost of audio cassettes has fallen dramatically, and they now offer a real alternative to the printed word. Australasia has been quick to recognize this and to use it: no fewer than 70 percent of their programs use audio cassettes. Australasia is also leading the way in the use of video cassettes.

Another striking fact is the very low use made of any technique other than correspondence in Western Europe. This is probably because much of the distance-learning activity is done by conventional institutions which use only the cheapest methods. Thus radio and audio cassettes are the only other methods used widely.

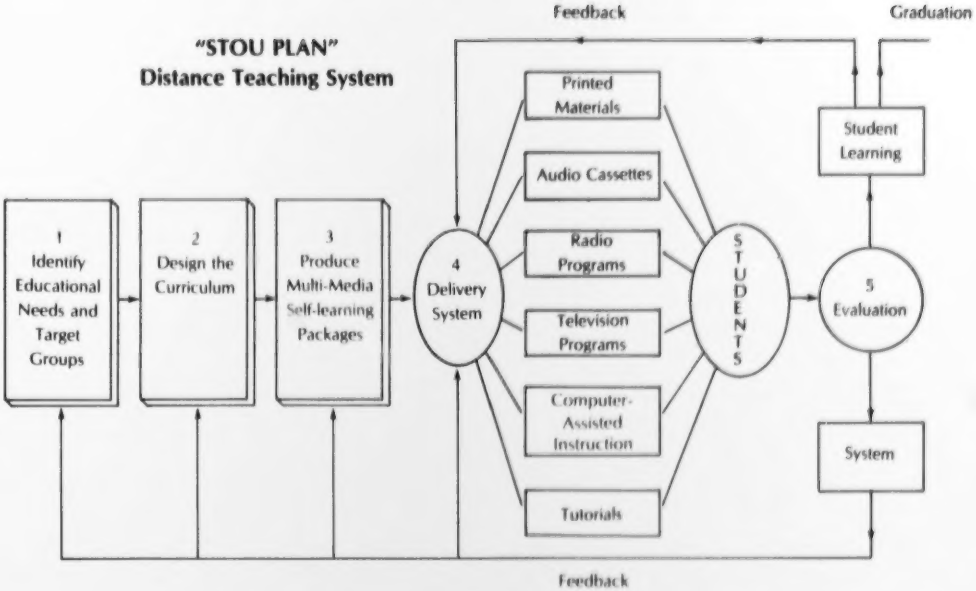
Electronic media today have an increasingly important role in distance teaching/learning systems, especially those media which permit the development of interactive potentiality and allow students convenient control over their use.

The media which have attracted special attention in this respect are computers and, in particular, their application in Computer-Assisted Instruction (CAI).

In distance teaching/learning systems employing a multi-media approach, CAI is, therefore, one important medium that can contribute significantly to enhancing the effectiveness of distance education.

Since I myself have direct experience with the development of a distance teaching system which uses the mixed media approach and features printed materials as the core medium, I will emphasize this approach in my paper. It could be viewed as one model of the use of printed materials in distance education.

The distance teaching system which I will present as a case study is the system developed at Sukhothai Thammathirat Open University in Thailand. It is a case of the development of a distance teaching system employing a mixed-media approach suitable for the conditions of a developing country. The "STOU PLAN" [3] for Distance Teaching System, which is composed of 5 stages, can be concisely illustrated in the following chart.


"STOU PLAN"
Distance Teaching System
Feedback
Graduation
1
Identify Educational Needs and Target Groups
2
Design the Curriculum
3
Produce Multi-Media Self-learning Packages
4
Delivery System
Printed Materials
Audio Cassettes
Radio Programs
Television Programs
Computer-Assisted Instruction
Tutorials
STUDENTS
Student Learning
5
Evaluation
System
Feedback

The first stage in the development of the distance teaching system involves identifying the educational needs of the target groups through preliminary surveys and research. This enables us to know the needs of the general public as well as various individual groups. This information can then be used as a basis for the development of the following stage.

The second stage is curriculum development, and the structure of the curriculum must be set up in such a way that it facilitates the use of distance teaching techniques. The academic structure in the "STOU PLAN" is based on the principle of course integration. That is, an attempt is made to integrate different academic areas into specific groupings or categories which will facilitate the student's ability to synthesize and apply the knowledge acquired and which will be easy to study on one's own. Course integration is thus primarily of an interdisciplinary nature. The establishment of the different schools has been carried out along the lines of career and professional development rather than being discipline-oriented in order to conform to the principle of course integration just mentioned. The curriculum is thus divided into "course blocks," each of which carries 6 semester credits. Four-year bachelor's degree programs are composed of 22-24 course blocks or 132 to 144 semester credits. The reason that the "STOU PLAN" has set up the 6-credit course block exclusively rather than subdivide into smaller courses is based on two major principles, namely:

1. Academic principle – Setting up the course blocks in the manner just described facilitates course integration; that is, it makes it easier to integrate course content in an interdisciplinary fashion more completely than would be the case if smaller, less-encompassing courses were used. In terms of learning, this approach is appropriate for the distance education system since it enables the students to concentrate rather than diffuse their study efforts; for in any one semester, they will not have to study more than three blocks. The use of the course blocks allows us to oversee the standards and quality of the teaching/learning process to a fairly high degree. This is because the production and development of the course blocks is done by a course-production team. Academic standards are thus the responsibility of a group of academics rather than of individual instructors. Aside from this, the use of course blocks also facilitates the establishment of such supplementary media as radio, television, and special tutorial sessions. Particulary when there is a limited amount of time, it is easier to produce interesting programs related to the course blocks than would be the case if numerous smaller courses were used. When the curriculum structure featuring this block system is considered solely from the academic viewpoint, four positive aspects can be identified, namely:

(1) It facilitates academic integration;
(2) It facilitates self-study;
(3) It improves the oversight of academic quality and standards; and
(4) It facilitates the use of supplementary media in systems based primarily on printed materials.

2. Administrative principle – The use of the course-block system reduces the complexity of administration, making it more economical and efficient. Students are able

easily to control their own study load, and the system is convenient with respect to registration, testing, and teaching. Students are able to register by mail, and examinations can be given in every province in the country on a single weekend. In addition, the course-block system helps avoid "academic monopoly" in which a single instructor is the sole authority on a particular subject. This is due to the fact that the course block has far more content and activities than could be produced by a single instructor on his own with a substantial teaching load. The course-block system also helps bring about an integrated approach to work, for the system demands that work be carried out as a team in the form of a course-production group. Each team has content specialists, an educational technologist, and an evaluation specialist who are jointly responsible for all phases of course production. This naturally results in integrated instructional materials and ensures that the educational system will be fully open, for it provides the opportunity for numerous specialists from outside institutions to participate in the development of the materials. The excellence which exists in society is thereby utilized to the fullest extent. An additional benefit is that this working together as an academic team helps bring about a spirit of teamwork in administrative work as well, a great advantage for the overall administration of the University.

The third stage involves selecting and producing the teaching media packages. The "STOU PLAN" was chosen to make use of a mixed-media approach based on the five following criteria: availability, accessibility, acceptability, validity, and economics. Printed materials are the main or core medium, and tapes, radio and television programs, and special tutorial sessions are the supplementary media. For each course block, the student is expected to spend approximately 180 hours per semester studying the printed materials. (This amounts to roughly 12 hours per week for 15 weeks). He also listens to at least one 60-minute tape (For some course blocks, such as the English courses, the student will listen to as many as 15 tapes.), listens to fifteen 20-minute radio programs, and views five 30-minute television programs. He also has the opportunity to attend 10 hours of special tutorials held in local study centers located in each province. In producing teaching media packages according to the "STOU PLAN," the first step is the production of the printed texts and workbooks. Then selected portions of the text are used as the basis for tapes, radio and TV shows, and tutorial-session workbooks. These latter media are considered as supplements to the printed materials – the core medium. The completed teaching package is thus in the form of a multi-media self-learning package.

The fourth stage involves establishing delivery systems in order to communicate knowledge to the students. The printed materials and accompanying tapes are sent by mail to the student's home, and radio and TV shows are aired at the same time throughout the country. The tutorial sessions are held on weekends in local study centers located in each province. CAI programs are provided at selected study centers and function as "electronic tutors" for such courses as science, mathematics, and statistics. The distance education system established according to the "STOU PLAN" is thus in the nature of home-based education.

The fifth stage is composed of evaluation and follow-up, which is of two types. The first is evaluation of student learning by final examinations held each semester in the local study centers. A student must sit for the exam in the study center to which he has been assigned, and the exams are held at the same time throughout the country, ordinarily on weekends. The second type of evaluation is system evaluation, which is conducted in order to obtain feedback that can be used to improve the effectiveness of the curriculum and the teaching/learning process.

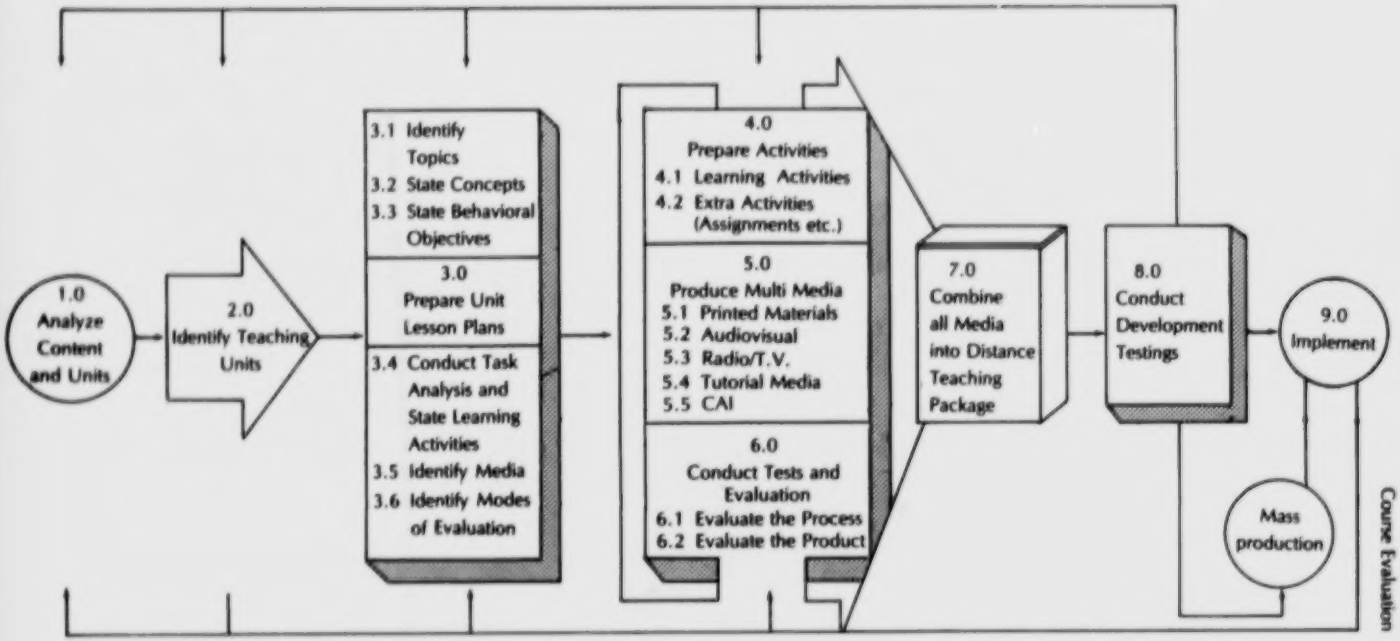
THE PRODUCTION AND USE OF PRINTED MATERIALS

In distance teaching systems using mixed media with printed materials as the core medium such as in the "STOU PLAN," the production of these materials is an important process and activity of the Distance Media Production System. This system can be graphically illustrated in the chart on page 20.

The production of printed materials for use in distance teaching can be carried out in various ways; for example, these materials might be in the form of conventional textbooks or lecture notes. The effectiveness of the printed materials in terms of helping the student to study on his own depends largely on the format and the way in which the content is presented. Special efforts were thus made to develop a format suitable for printed materials which were to be used specifically in distance teaching. One format in widespread use in distance education is the programed textbook, which is adapted from programed instruction. The production of this type of printed material aims at making the student an active learner. Thus materials of an interactive nature must be produced, and these include both a programed text as well as an accompanying workbook. Students who use this type of printed material will master the content in small increments, in accord with their study time. They must complete various activities or exercises as part of learning the content of each unit, and they will receive periodic feedback to indicate the extent of the progress in their studies. Thus they experience a series of successes in their self-study, and this encourages them to progress further in their quest for knowledge.

In the block system of the "STOU PLAN" every block carries 6 semester credits. Each of these blocks has a programed text and a workbook which are divided into 15 units, each of which requires approximately 12 hours of study time per week. Each unit begins with a unit lesson plan which spells out clearly the topics, concepts, objectives, activities, and evaluation methods for the unit. Then follows the presentation of the actual content, which is broken down into sections. In each section there are activities which the student must do in his workbook, and in each unit there is a pre-test and a post-test complete with answer keys in order to give the student feedback.

DISTANCE MEDIA PRODUCTION SYSTEM



From STOU's experience in developing these programed texts for use in the university's distance teaching system, it appears that they have been quite successful and have accomplished their purpose. The methods of writing these texts is obviously more complex than that used for writing ordinary texts. However, if course writers are adequately trained before they commence their work, these academics from various fields can accomplish their task without undue difficulty.

CONCLUSION

In the development of distance teaching/learning systems employing a multi-media approach, the most important consideration concerns the blending or harmonizing of such media to permit distance education to become even more effective.

From the author's experience, the harmonizing of the print medium and the electronic media is of primary importance. The results of experiments conducted at Sukhothai Thammathirat Open University to date serve to confirm that the blending of printed materials and computer-aided instruction is a most interesting development, which promises to bring real benefits; and, if this process were to be extended and practised more widely, it would enhance considerably the effectiveness of distance education. Ultimately, on the basis of such information, it is conceivable that distance teaching will, more and more, come to rely on computers as the main instructional medium in the emerging Computer-Based Education (CBE).

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[1] Michael J. Pentz and Michael W. Neil, *Education for Adults at a Distance*, Kogan Page, London, 1981, Chapter 4: pp. 97 - 125.

[2] Walter Perry, *The State of Distance Learning Worldwide*, International Center for Distance Learning of the United Nations University, 1984.

[3] Sukhothai Thammathirat Open University, *Focus on STOU.*, Graphic Art Publishing, Bangkok, 1984.

[4] J.H. Horlock, "A University Without Walls," *Media in Education and Development, Vol. 17 No. 2.*, June 1984, pp. 52 - 56.

The Distance Teaching University: The Case of Sukhothai Thammathirat Open University

Wichit Srisa-an

One concept that has strongly influenced the provision of education during the last decade is that of lifelong education, according to which education is considered to be an essential factor in human existence. It is a process and a chain of activities in which man is involved throughout his life. The provision of education in accordance with this concept is intended to meet the needs of society and individuals, regardless of sex or age. Consequently, there have been attempts to search for appropriate patterns of providing education at various levels in conformity with this lifelong education principle. The new form and structure of providing higher education which has been introduced and which is of great interest to countries throughout the world is the open distance education system.

In developing countries, human resource development is of crucial importance. Such development not only increases the quantity of trained manpower in response to national needs, but it also improves the quality of life and work for people generally. As human resources are developed, rising expectations are engendered in the people for further education. But opportunities for education at the highest level are limited because resources are limited. Under these conditions of scarcity, inequality of educational opportunities naturally arises. Such inequality can be erased only by efforts to democratize education. Thus various models and methods must be explored to make higher education truly education for the masses. But it is essential that these approaches be economical and efficient so as not to exceed limited resources.

This paper has been presented at international conferences on five occasions and has been included in the following publications:

1. Neil, Michael W.[Ed], *Education of Adults at a Distance: A Report of the Open University's Tenth Anniversary International Conference*, London: Kogan Page 1981, pp. 23 – 27.
2. Seoul National University, *Universities in Mass Society*, Seoul National University Press, 1983, pp. 169 – 175.
3. Gellor, Jaime M. et. al. [Ed], *Readings on New Thrusts in Education*, Manila: Ministry of Education and Culture, 1984, pp. 157 – 162.
4. The University of the Philippines, *Alternative Educational Future*, Quezon City: Phoenix Publishing House, 1985, pp. 126 – 133.

In order to update the data, some minor changes have been made in the paper for this publication. However the substance of the paper remains unchanged.

One approach used to expand educational opportunities is regionalization, the establishment of universities in different geographical regions of the country. A second approach is to establish a multicampus university system. Here campuses of a single university are located in centers of population in various parts of the country. A third approach is to provide extension or extra-mural studies. A fourth approach is to establish institutions of the community college variety.

But these four approaches, even though they expand educational opportunities considerably, still do not completely solve the problem of inequality. This is particularly true in an agricultural society such as Thailand's where fully 85 percent of the people live in rural towns and villages. The four approaches simply cannot reach out to all these local areas to provide true equality of educational opportunity for all the people.

In Thailand attempts have been made during the last decade to broaden opportunities for higher education by increasing the number of regional universities, setting up an open admissions university, and by welcoming the private sector's participation in establishing private colleges. All these efforts failed to meet the needs of the people and society as planned, especially those of working adults who wished to have access to higher education to improve their quality of life and professional competence in a rapidly changing country in the process of accelerated development such as Thailand.

Given this state of affairs, a distance education model has been used in Thailand at Sukhothai Thammathirat Open University (referred to as STOU hereafter) as an alternative to the other four methods. Democratization of higher education can be more fully achieved using this model in that education is brought directly into the home. Integrated university-level courses are provided in order to upgrade working adults in the public and private sectors and to afford high school graduates who live in rural areas the chance to work and study at the same time. Courses are also made available to those who simply want to further their knowledge without enrolling in a degree or certificate program. Knowledge is thus disseminated to the people at large.

The university does not have its own classrooms but relies instead on a multi-media approach, in combination with a network of regional and local study centers. The main media are printed texts, textbooks, workbooks, and radio and television broadcasts, including video-tapes and course materials recorded on audio-cassette tapes. The various regional and local study centers provide tutorial and counselling sessions as well as other study facilities for students throughout the country.

This is truly a program which reaches out to every corner of the nation, offers students a home-based education, and helps improve the quality of life and work for more and more people.

The idea of setting up a distance teaching university in Thailand received earnest support from the Thai Government in 1976 when the Office of University Affairs appointed a

Planning Committee to formulate an open university project with the author as chairman. During the planning stage, several questions arose: Why was it necessary to set up a distance learning university? Would the distance learning university really be able to maintain the same quality and academic standards as those of conventional universities? Would it be worthwhile to invest in this type of university? Would there be much educational wastage as a result? But the most important question was: Would the Thai people be favorably disposed to the distance learning system since they had been accustomed to the classroom system all along? Clear and definite answers to all these questions were needed at the time.

The Planning Committee not only had the difficult task of setting up the administrative and academic structure of the open university with a distance learning system, but it also had to collect and analyze all the relevant information and data for the decision-making authorities concerned, in order to dispel doubts, convince them of the desirability of setting up such a university, and gain support from the general public. Accordingly, during the project planning phase, several precautionary measures were taken to ensure a greater degree of success: a survey of the educational needs of the general public, tests with the academics of various universities to verify the efficacy of the distance teaching concepts and techniques, a background study into the structure and organization of existing distance teaching universities in various countries, and a survey of existing infrastructures favorable to the provision of this type of educational (for instance, such facilities as the postal service and radio and television networks). Eventually, the Planning Committee fulfilled its assigned task, and the project was submitted to the Government for approval. On September 5, 1978, the open university was created by Royal Charter under the name of "Sukhothai Thammathirat Open University" to become the first distance teaching university in Thailand and in Southeast Asia.

Though officially established, the open university was still not in a position to admit students immediately. It needed some two years of preparation before its first student admissions. Once again, the author was entrusted with another important task – that of being the rector of this brand-new university and of translating this plan into reality. The first two years of operation were spent in making preparations for enabling the university to operate in reality rather than merely on paper. The main tasks undertaken were those of organization, recruitment and development of personnel, making provision for funds and facilities, and curriculum development and instructional design. During the preparatory phase for the first student admissions, the main question was whether to start admitting students before the university had a permanent home, or to defer admission until the completion of the university's headquarters (which was expected to be in 1984). The first alternative was chosen in order to test the feasibility of making use of existing resources to the utmost. Consequently, the first enrollment took place in December 1980 when a total of some 82,000 students were registered in two schools – Educational Studies and Management Science. This figure was seven times higher than the original estimate. Nevertheless, with a view to being open in the fullest sense of the word at the outset, the university admitted all those students without exception. For the 1981 – 1985 academic years, enrollments rose to approximately 370,000 and the number of schools

increased to ten. The ten schools are Liberal Arts, Educational Studies, Management Science, Health Science, Law, Economics, Home Economics, Agricultural Extension and Cooperatives, Political Science, and Communication Arts.

In the initial stages of its development, STOU has concentrated on its teaching and service functions. In the teaching area, STOU now provides bachelor's degree programs and has up to this year conferred degrees on three classes of graduates totalling 38,318.

In its service capacity, the university has stressed the provision of continuing education for the general public. This has been achieved chiefly in three ways. First, the university has established a certificate-of-achievement program which sets no limits whatsoever on enrollment. Students in this program study the same integrated courses and sit for the same exams as do regular degree students. If they pass the exam for a particular course, they receive a certificate of achievement. To date, there have been eight such enrollments and a total of approximately 9,000 participants registered.

Second, the university has set up in-service training courses with governmental and private agencies in accord with the training needs of each respective agency. In this manner the entire distance teaching system is used in the implementation of inservice training. One such program has been established in cooperation with the Police Department to provide training in the law for non-commissioned police officers. Another program has been set up with the Department of Lands to provide training for the Department's officials. A third program has been established in cooperation with the Department of Local Administration to provide administrative training for subdistrict chiefs and village headmen. A fourth program, offered in cooperation with the Community Development Department, aims at the nationwide training of women in such areas as home economics, family management, health, and vocational skills.

Third, the university has extensively used broadcast media to disseminate knowledge and information to the people throughout the country. Over 150 radio programs, each 20 minutes long, are broadcast weekly, totalling 7,800 radio programs per year. Each week some 21 television programs, each 30 minutes long, are broadcast, totalling 1,100 programs per year. It is estimated that about five million people, students and members of the general public, watch and listen to these programs.

In view of the fact that the author represents an institution of distance teaching whose status could still be classified as "beginner," it seems appropriate that he confine himself to presenting such problems as have emerged from the limited scope of experience acquired so far. Altogether there are some six critical problems to be highlighted.

The first one is: *Why is it necessary to provide higher education through the distance learning system?*

In developing countries, opportunities for education in the traditional system are somewhat limited. Since the level of economic and social development of a society is closely related to its stock of values, attitudes, knowledge, and skills, both productive and social, it is essential to have a teaching mode that will enable a vast majority of working people to have access to education on a more extensive and egalitarian basis without having to stay away from their jobs to attend classes. The distance learning system can thus be seen as an effective and economical means of extending educational opportunities.

The second point is: *For whom is such distance learning intended?*

Developing countries in Asia have to try to satisfy the rapidly increasing demands for education for both adults and secondary school-leavers. The establishment of an open university will serve two main purposes: To enable adults to undertake university studies, and to ensure the availability of places for young adults fresh from secondary schools. For an open university such as STOU to provide educational services for these two target populations – so diverse in maturity, background, life-style, and motivation – by means of the same teaching mode will inevitably constitute a complex problem. Whereas the occupational groups are content with an external studies system that allows them to continue their normal occupations, the young adult groups, having been accustomed to face-to-face teaching and being still unemployed, would naturally prefer to be internal students in conventional universities.

In fact, in the past two years that STOU has admitted fresh secondary school graduates, the number of applicants has been approximately 6,000 – less than 10 percent of the total applicants each year. Therefore, even though the university is open to both working adults and secondary school-leavers, it is clear that distance education is more popular with the former group, and we expect this trend to continue.

The third point is: *How are we to set up an appropriate distance teaching and learning system?*

At the beginning of our project, we tried to look for a satisfactory blueprint or a successful precedent to follow by studying the development and achievements of such universities as the U.K. Open University and learning from their long experience in teaching at a distance. After several study and observation tours to various regions of the world, we have come to the conclusion that it is impossible to adopt and imitate any existing model, and that each institution must devise its own distinctive system well-suited to the socioeconomic environment of the country.

In developing countries, mass communication technology has not as yet attained the desirable degree of progress. As the use of radio and television in particular is still limited,

greater reliance has to be placed on printed materials than on electronic media. Since local educational services are scarce and not easily accessible, it is necessary to supplement independent learning with the provision of a greater number of tutorials and opportunities for travelling staff/student contacts.

Another problem relates to publications in foreign languages (such as English). As the mother tongue is used as the medium of instruction in many countries, it is virtually impossible to make use of the existing teaching materials in conjunction with other open universities in developed countries. Hence, there is an increase in the responsibilities that must be borne. Admittedly, this problem can partly be solved by translations. But, on the whole, the production and development of self-instructional materials will still have to be undertaken. As far as the exchange of teaching materials among distance learning institutions is concerned, the possibilities of such realization are somewhat limited. What can readily be achieved instead is in the field of technical know-how rather than in that of teaching materials.

The fourth point is: *How are we to maintain high-quality teaching and prevent a lowering of standards?*

Many academics, especially those of conventional universities, and employers who have been accustomed to the traditional educational practice tend to doubt whether it is possible to teach at a distance effectively and claim that the distance learning system is likely to turn out graduates of lower quality than those produced by conventional universities. It is true that some open universities such as the U.K. Open University have proved that it is possible to provide education of high quality similar to that of conventional universities. In developing countries, however, an open university has to face constraints of various kinds, such as those previously mentioned. The question is how to convince the public of the effectiveness of teaching at a distance and to win respectability for such a new venture rapidly.

We have been able to achieve respectability so far in essentially three ways. First, we have included outstanding academics as well as acknowledged leaders from other agencies in virtually all our activities. They have served as planners, curriculum developers, part-time course team members, materials producers, and tutors at supplemental instructional sessions. Fully two-thirds of those engaged in such activities are from outside STOU. They in effect serve as external examiners as well, for in addition to producing course materials, they also write examination questions.

Second, we have gone through the accreditation process with various accrediting agencies from our inception. We were thus able to achieve accreditation before graduating our first batch of students.

Third, our respectability has been enhanced by the quality of our instructional materials, especially our textbooks. There has been a general lack of Thai-language texts, and we have helped to overcome this deficiency. We have produce texts in many different areas,

and many of these are being used by other universities. This has helped us to achieve rapid recognition.

The fifth point is: *How are we to avoid wastage without producing an overabundance of graduates, or how can we avoid the wastage-surplus dilemma?*

The dilemma faced by most open universities is that, on the one hand, there is a high drop-out rate and that, on the other, there is a surplus of graduates, exceeding the demand for them. Educational economists tend to criticize investment in distance teaching by pointing out that the wastage rate in open universities is higher than in conventional universities. At the same time, if open universities can teach effectively, there is a concommitant fear that there will be an over-abundance of graduates because the intake of students will be greater than that at conventional institutions of higher education. On the other hand, if a university is really open in the full sense of the word, then the opportunities for education offered to the community at large will be unlimited. So how is one to strike a balance between social demand and manpower requirements?

Our recent experience with enrollment statistics seems to indicate that the problem of unemployed graduates may not be a serious concern. For, as mentioned earlier, less than 10 percent of the applicants are fresh high school graduates. The rest are working adults who do not wish to separate work from study. Thus it appears that we are concentrating more on in-service education for those already working than on preservice training for those who have yet to enter the work force. And we have every reason to believe that this trend will continue. Thus the problem of unemployment may not arise at all; or, if it does, it will affect a relatively small proportion of the students.

The sixth and last point is: *What is the key to success?*

The provision of higher education through the distance learning system owes its success or failure to the personnel available, especially the academic staff. In developing countries, there is already a shortage of well-qualified staff in conventional universities. With the establishment of another university, the staff shortage problem becomes more serious and selection even more restricted. In the case of an open university, even if the greatest care has been taken in recruiting really well-qualified staff, there is still the problem of reorienting them from the traditional educational practice with which they have been acquainted. Indeed, it is a most difficult task to transform them into enthusiasts for, and experts in, the new system. It is not an exaggeration to say that distance teaching has revolutionized higher education, which used to be considered as a "sacred rite practised behind closed doors" for centuries. Academics involved in the distance teaching system will therefore be required to have exceptional courage and skills. One of the most important tasks that an open university in developing countries has to undertake from the outset is that of creating new attitudes and values. In other

words, academics should undergo a kind of conversion of the soul to become a new breed of academics favorably disposed to the distance teaching system. Such a task is indeed most strenuous and demanding.

If the development of personnel is the key to success, then cooperation among institutions of distance teaching should be in the form of sharing resources and expertise so as to enrich the teaching staff's knowledge and experience and provide them with new technical know-how. This is something on which great emphasis should be placed. To have high-quality distance teaching and learning, teachers are undoubtedly the key to success.

The author would like to conclude by stating that the distance teaching and learning system is an innovation that will facilitate the democratization of higher education in mass society. It is easy to say this, but difficult to put into practice. Nevertheless, hard as it may seem, you all will agree that it is both a mission that we have to accomplish and a challenge that we have to accept.

The Management and Economics of Distance Education: The Case of Sukhothai Thammathirat Open University

Wichit Srisa-an and Tong-in Wangsotorn

Abstract

This paper focuses on the managerial skills required to run an open university and the economic aspects of such an operation. It is a case study of Sukhothai Thammathirat Open University (STOU) and reflects the current problem in Thailand which is to seek effective and economical ways of responding to the needs of and demands for more widespread access to higher education.

The fundamental concept of open education would seem to pose enormous problems, both in terms of economics and management. At STOU the distance teaching/learning system (DTL) was selected as the most appropriate vehicle to convey education to more of the people – to a much greater part of the population – in the attempt to overcome these two specific problems.

The first section of the paper, Part I, provides details of admission and the arrangement of the courses followed by a description of the degree programs offered by STOU's 10 schools, including available majors and the specific titles of the degrees. Certificate programs and joint programs with other agencies are also described.

Consideration of the students themselves is also introduced in the first section. Data on the new student intake is examined, and an analysis of the information about them and their success in graduation is provided.

Part II takes up the theme of management in distance education. The first section, in essence, deals with the academic and administrative structure and refers to the organization structure. This comprises the governing bodies – the University Council and the Academic

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Senate – together with their duties and responsibilities, role and function; the support units, such as the Offices, and the academic units – the schools, their chairmen, boards of studies, and academic assessors.

The second section of Part II deals more specifically with management per se. The discussion of the system functions and supportive units provides a broad overview of the operational mechanics from admission to examinations and graduation. The management of the materials production process established at STOU exemplifies the success of the planning, implementation, and management of the STOU system.

Part III emphasizes the economic aspects of distance education at STOU and compares these with other institutions. A general accounting of institutional costs and the cost to the individual and society are also covered.

PART I BACKGROUND OF THE UNIVERSITY

1. Background

The idea of establishing an open university arose from the desire to democratize higher education and from the stimulus provided by the concept of life-long education. The increasing demand for higher education led the Royal Thai Government to look for ways of responding to this demand effectively and economically.

The distance teaching/learning system was viewed as a practical means of supplementing the conventional university system. Given existing financial constraints, an open education system using distance teaching methods was considered to be the most appropriate alternative.

After three years of planning, Sukhothai Thammathirat Open University (STOU) was established by Royal Charter in September 1978. It was the first open university in Southeast Asia to employ a distance teaching/learning system to extend higher education to the people. Like other conventional state universities, Sukhothai Thammathirat Open University is under the guidance of the Ministry of University Affairs, enjoys a great degree of autonomy, and has the right to award its own degrees.

2. Programs

2.1 Degree Programs

Eligible for enrolment as students in the degree program, without entrance examination, are:

(a) those who have completed upper secondary schooling (12 years) or its equivalent;

(b) those who have completed lower secondary schooling (10 years), who have had 5 years of work experience after receiving their certificates, and who are over 20 years of age as of the 1st of July of the enrolment year;

(c) holders of diplomas or degrees at any level, or their equivalent, from institutions of higher education as approved by the STOU Academic Senate.

STOU employs a two-semester system and allows students to earn a degree in 4 - 12 years. Courses are arranged in blocks to provide an integrated study of interrelated subjects. Each block is worth 6 credits. The number of credits needed for a bachelor's degree is from 132 to 144.

The degree programs offered by STOU are shown in the following table:

Table 1: Degree Programs by Major

School/Program/Major	Degree
1. School of Liberal Arts Provides foundation courses for other Schools.	
2. School of Educational Studies	
2.1 Four-Year Program	
(1) Elementary Education	B. Ed.(El.Ed.)
(2) Secondary Education	B. Ed.(Sec.Ed.)
2.2 Two-Year Program	
(1) Elementary Education	B. Ed.(El.Ed.)
(2) Secondary Education	B. Ed.(Sec.Ed.)
(3) Educational Administration	B. Ed.(Ed.Ad.)
3. School of Management Science	
3.1 Four-Year Program General Management	B.B.A. (General Management)
3.2 Two-Year Program	
(1) General Management	B.B.A. (General Management)
(2) Construction Management	B.B.A. (Construction Management)
4. School of Law	
4.1 Four-Year Program Law	LL. B.
4.2 Three-Year Program Law	LL. B.
5. School of Economics	
5.1 Four-Year Program Economics	B. Econ.
5.2 Three-Year Program Economics	B. Econ.

Table 1 (Cont.)

School/Program/Major	Degree
6. School of Health Science	
6.1 Four-Year Program	
(1) Health Management	B.P.H. (Health Management)
(2) Public Health	B.P.H.
(3) Nursing	B.N.
7. School of Home Economics	
7.1 Four-Year Program	
(1) Community Nutrition	B. HE.
(2) Child and Family Development	B. HE.
8. School of Agricultural Extension and Co-operatives	
8.1 Four-Year Program	
(1) Agricultural Extension	B. AgExt. Coop.
(2) Co-operatives	B. AgExt. Coop.
8.2 Two-Year Program	
(1) Agricultural Extension	B. AgExt. Coop.
(2) Co-operatives	B. AgExt. Coop.
9. School of Political Science	
9.1 Four-Year Program	
(1) Political Theories and Techniques	B.A. in Pol.Sc.
(2) International Relations and Comparative Politics	B.A. in Pol.Sc.
10. School of Communication Arts	
10.1 Four-Year Program Communication Arts	B. Comm.Arts
10.2 Three-Year Program Communication Arts	B. Comm.Arts

2.2 Certificate Program

The University has co-operated with various agencies in setting up short courses and programs for personnel development for the respective agencies, using the distance teaching/learning system. At present, the University offers the following certificate programs:

(1) Certificate in Basic Home Economics	1 year
(2) Certificate in Land and Property Law	2 years

(3) Certificate in Village Administration	1 year
(4) Diploma in Government Administration	1 year
(5) Certificate in English for Specific Professions	1 year
(6) Certificate in Teaching	1 year
(7) Certificate in Agricultural Extension and Co-operatives	1 year

2.3 Certificate of Achievement Program

Besides offering courses in the various Schools to students in degree and certificate programs, STOU also offers courses to students in a non-degree program. This is called the Certificate of Achievement program. Students are allowed to study one course per semester. The University allows them to take any course without stipulating any background requirements whatsoever.

Students in this program use exactly the same materials and sit for the same examination as regular students. Upon successfully completing a particular course, they will receive a Certificate of Achievement for that course.

A special feature of this program is that it makes university courses available to anybody who wants to study. No educational qualifications are required to enrol in the program. Candidates need only be literate. Thus the program is popular with adult working people seeking personal and professional development. Anyone can enrol as a student in the course while he or she is employed. By using multi-media, the program can manage a large number of students throughout the country. At the end of academic year 1983, 5,298 students had enrolled in this program.

2.4 Associate Student Program

This is a joint-program with other agencies which aims at the career development of working people. Students in this program, called associate students, take courses in the same way as regular students but do not pursue a degree. They receive only grade reports at the end of the semester. At present, the University has this joint-program with the Bangkok Bank and the Bank of Agriculture and Co-operatives. In 1985, about 1,651 employees of the Bank of Agriculture and Co-operatives and 30 from Bangkok Bank enrolled in the program.

3. Students and Graduates

3.1 New Students

Since its inception, STOU has enrolled about 360,000 students. In academic year 1985, the University admitted a new intake of 83,456 students. The three most popular schools were the School of Management Science, the School of Educational Studies, and the School of Law. About 75 percent of the new intake was enrolled in these three schools, as shown in Table 2.

Table 2 : Distribution of New Students by School

School	1980-1981 Number	1982 Number	1983 Number	1984 Number	1985 * Number
1. Management Science	6,805	16,225	11,163	23,839	25,263
	(8.3)	(23.32)	(22.28)	(28.03)	(30.27)
2. Educational Studies	75,334	10,328	12,063	20,421	17,310
	(91.7)	(14.85)	(24.07)	(24.01)	(20.74)
3. Law	–	29,827	14,913	18,792	16,201
	–	(42.88)	(29.76)	(22.10)	(19.41)
4. Home Economics	–	2,287	2,353	3,006	3,976
	–	(3.29)	(4.70)	(3.53)	(4.77)
5. Communication Arts	–	–	–	4,102	5,585
	–	–	–	(4.83)	(6.69)
6. Political Science	–	–	3,731	4,688	4,118
	–	–	(7.45)	(5.51)	(4.94)
7. Health Science	–	3,985	2,061	4,401	4,743
	–	(5.73)	(4.11)	(5.18)	(5.68)
8. Liberal Arts	–	–	–	–	948
	–	–	–	–	(1.14)
9. Economics	–	1,553	1,932	2,786	1,938
	–	(2.23)	(3.86)	(3.28)	(2.32)
10. Agricultural Extension And Co-operatives	–	5,356	1,896	3,006	3,374
	–	(7.70)	(3.78)	(3.53)	(4.04)
Total	82,139	69,561	50,112	85,041	83,456
	(100.00)	(100.00)	(100.00)	(100.00)	(100.00)

* As of June 20, 1985

Sources: Enrolments, for academic years 1980 - 1981, 1982, 1983, 1984, 1985

3.2 Total Enrolments

Enrolments in each semester vary. Normally the number of students enrolled in the first semester is greater than in the second. In the first semester of academic year 1985, there were 173,350 students, as shown in Table 3.

Table 3: Enrolment by School – First Semester, 1985 •

School	Number	Percentage
1. Management Science	46,689	26.93
2. Educational Studies	41,125	23.72
3. Law	41,274	23.81
4. Home Economics	6,874	3.97
5. Communication Arts	7,628	4.40
6. Political Science	7,761	4.47
7. Health Science	10,100	5.83
8. Liberal Arts	948	0.55
9. Economics	3,934	2.27
10. Agricultural Extension and Co-operatives	7,017	4.05
Total	173,350	100

• As of June 20, 1985

3.3 Graduates

In 1982, students in the two-year programs admitted for the first time in 1980 - 1981 comprised the first batch of graduates. There were 9,594 graduates in this year. In 1983, there were 17,236 graduates from four Schools: Educational Studies, Management Science, Home Economics, and Agricultural Extension and Co-operatives. In 1984, there were about 11,000 graduates from these four Schools and the Schools of Law and Health Science. Table 4 shows the numbers of graduates from the first and second batches of students.

Table 4: Numbers of Graduates – First and Second Batches

School/Program	1982		1983	
	Number	%	Number	%
Educational Studies	8,217	85.65	14,527	84.28
Elementary Education	3,026	31.54	6,604	38.31
Secondary Education	2,640	27.52	3,551	20.60
Educational Administration	2,551	26.59	4,372	25.37
Management Science	1,377	14.35	1,956	11.35
Construction Management	1,377	14.35	1,076	6.24
Business Administration	–	–	880	5.11
Home Economics	–	–	250	1.45
Community Nutrition	–	–	250	1.45
Agricultural Extension and Co-operatives	–	–	503	2.92
Agricultural Extension	–	–	481	2.79
Co-operatives	–	–	22	0.13
Total	9,594	100.00	17,236	100.00

PART II THE MANAGEMENT OF DISTANCE EDUCATION

1. Organizational Structure

1.1 Governing Bodies

1.1.1 The University Council

The University Council is the supreme governing body of the University. As stipulated in the Sukhothai Thammathirat Open University Act B.E. 2521 (1978), the University Council consists of the following members:

The Chairman of the University Council to be appointed by the King

Ex Officio Members

- The Permanent Secretary of State for University Affairs or representative
- The Director-General of the Post and Telegraph Department or representative
- The Director of the Mass Communications Organization of Thailand or representative
- The General Manager of the Communications Authority of Thailand or representative
- The Rector of Sukhothai Thammathirat Open University

Academic Member

Representative of the Academic Senate of the University elected by the Academic Senate

Distinguished Members

Not less than four but not more than nine distinguished outsiders to be appointed by the King

The University Council elects one member as vice-chairman. The Council, upon the advice of the Rector, appoints a Vice-Rector as secretary.

The University Council has the following powers and duties:

(1) to establish the policy of the University relating to education, research, public service, and cultural preservation;

(2) to issue rules and regulations of the University;

(3) to approve the granting and conferring of degrees, diplomas, and certificates;

(4) to consider the establishment, dissolution, merger, and abolition of the offices, institutes, schools, as the case may be;

(5) to approve the affiliation of higher education institutions;

(6) to consider the appointment and dismissal of the Rector and professors;

(7) to approve the appointment and dismissal of Vice-Rectors, directors of institutes, directors of offices, deputy-directors of institutes, deputy-directors of institutes, deputy-directors of offices, associate professors, and assistant professors;

(8) to issue rules relating to finance and properties of the University;

(9) to appoint a committee to carry out any matter as entrusted to it by the University Council; and

(10) to carry out other duties relating to University affairs which have not been specifically entrusted to any particular person.

1.1.2 The Academic Senate

The Academic Senate is the internal body responsible for the academic affairs of the University. Members consist of the following:

Chairman

The Rector is the Chairman of the Academic Senate.

Ex Officio

- Chairman, School of Home Economics
- Chairman, School of Law
- Chairman, School of Communication Arts
- Chairman, School of Political Science
- Chairman, School of Management Science
- Chairman, School of Health Science
- Chairman, School of Liberal Arts
- Chairman, School of Educational Studies
- Chairman, School of Economics
- Chairman, School of Agricultural Extension and Co-operatives
- Director, Office of Educational Technology
- Director, Office of Educational Services
- Director, Office of Academic Affairs
- Director, Office of Registration, Records, and Evaluation
- Director, Office of the University Press
- Director, Office of Documentation and Information

Academic staff members holding the rank of professor are also ex-officio members of the Academic Senate.

Elected Members

The following members are elected by the academic staff of each school. They hold office for a term of two years but may be re-elected.

- Representative, School of Home Economics
- Representative, School of Law
- Representative, School of Communication Arts
- Representative, School of Political Science
- Representative, School of Management Science
- Representative, School of Health Science
- Representative, School of Liberal Arts
- Representative, School of Educational Studies
- Representative, School of Economics
- Representative, School of Agricultural Extension and Co-operatives

Secretary

The Vice-Rector for Academic Affairs serves as the Secretary of the Senate.

The Academic Senate has the following powers and duties:

(1) to consider and prescribe curricula, teaching, and evaluation;

(2) to propose the granting and conferring of degrees, diplomas, and certificates;

(3) to propose the establishment, merger, and abolition of institutes, offices, and schools;

(4) to consider the affiliation of higher education institutions;

(5) to propose the appointment of distinguished members of the University Council;

(6) to consider the appointment and dismissal of professors, associate professors, and assistant professors;

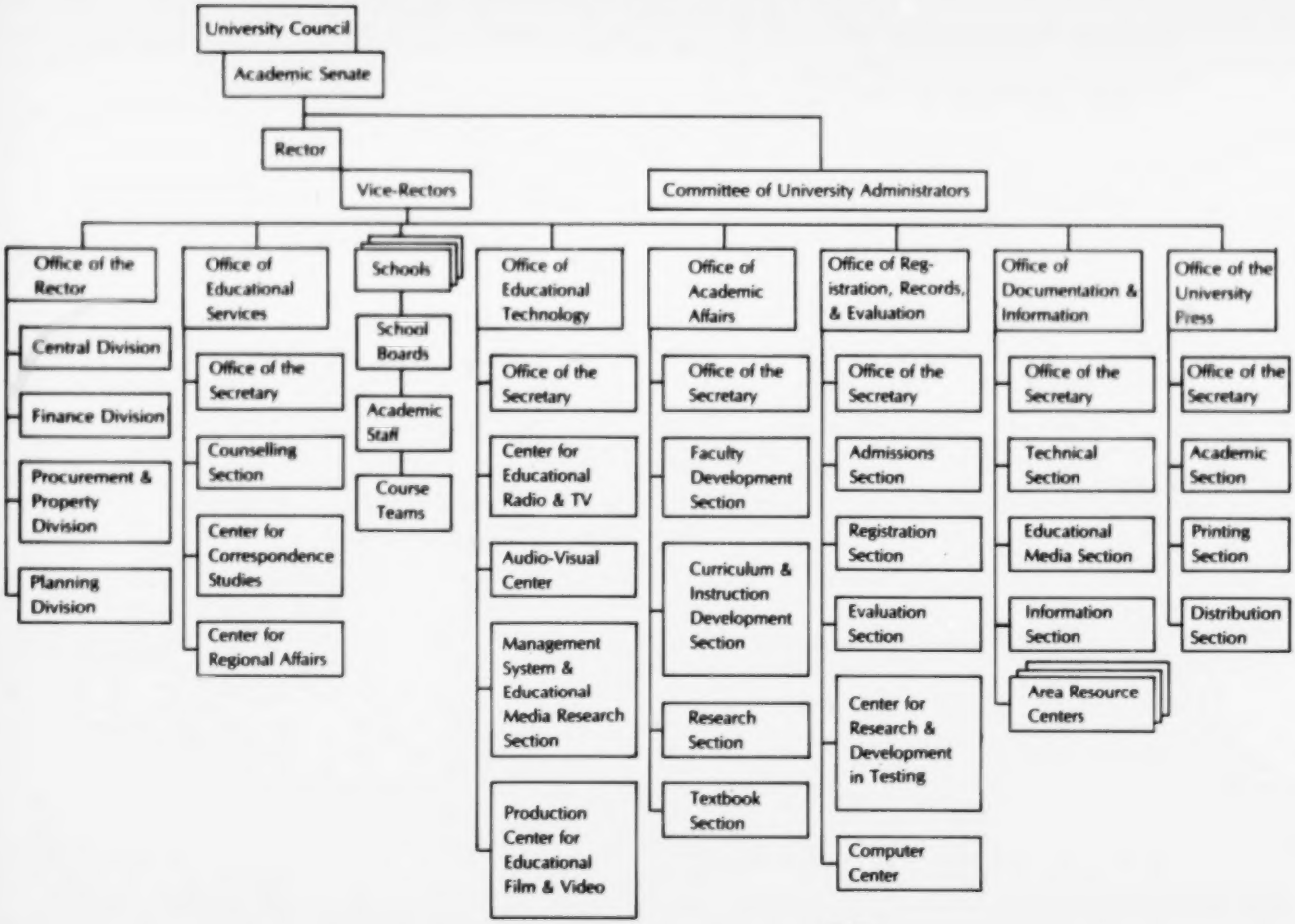
(7) to find ways and means to improve and develop the teaching, research, and public services of the University;

(8) to advise the University Council on academic matters; and

(9) to appoint a committee to carry out any matter as entrusted to it by the Senate.

The University Council and the Academic Senate are the governing bodies of the University as indicated in Chart 1. Whereas these two governing bodies are typical in higher education institutions in many other countries, in Thailand, STOU is the only university to have an Academic Senate. Having two governing bodies facilitates decision-making. The University Council is concerned with general policy-making while the Senate is more concerned with curriculum and instruction. The appointment of course team committees, which is unique to distance education, is effectively made by the Academic Senate.

Chart 1: ADMINISTRATIVE STRUCTURE OF THE UNIVERSITY



1.2 Supportive Units

There are at present seven offices providing administrative and technical support for the operation of the University. They are:

(1) Office of the Rector
(2) Office of Educational Services
(3) Office of Educational Technology
(4) Office of Academic Affairs
(5) Office of Registration, Records, and Evaluation
(6) Office of the University Press
(7) Office of Documentation and Information

The responsibilities and duties of these offices are as follows:

(1) The Office of the Rector is responsible for record-keeping, public relations, buildings and grounds, finance, personnel administration, planning, and the purchase and maintenance of supplies.

(2) The Office of Educational Services is responsible for providing educational and vocational counselling and guidance to students, organizing tutorials, sending educational materials to students, and co-ordinating STOU study centers throughout the country.

(3) The Office of Educational Technology is responsible for producing supporting media such as radio and television programs, films, audiotapes and videotapes.

(4) The Office of Academic Affairs is responsible for administrative and academic work assigned to it by the Academic Senate and the board of each school. It is also responsible for supporting research of the academic staff, translating and selecting books and texts for printing and distribution, and setting up staff training programs.

(5) The Office of Registration, Records, and Evaluation is responsible for admitting students, registration, keeping student records, supervising examinations, conducting research, and developing test instruments.

(6) The Office of the University Press is responsible for all types of printed matter, including books, texts, and workbooks.

(7) The Office of Documentation and Information is responsible for providing books and documents for staff and students, providing educational materials for STOU Corners, and co-ordinating Area Resource Centers throughout the country.

1.3 Academic Units

STOU does not follow the traditional practice of organizing into faculties and departments. Rather it consists of major study areas or schools. Each school has a board of

studies, consisting of the chairman of the school and 3 - 7 members elected by the full-time staff of that school. The chairman and the board members hold office for four years. Each board of studies is in charge of all the academic and administrative matters of the school as well as other assignments entrusted to it by the University Council or the Academic Senate. At present STOU has 10 schools:

(1) School of Home Economics
(2) School of Law
(3) School of Communication Arts
(4) School of Political Science
(5) School of Management Science
(6) School of Health Science
(7) School of Liberal Arts
(8) School of Educational Studies
(9) School of Economics
(10) School of Agricultural Extension and Co-operatives

STOU also has a project to establish a School of Science and Technology in the Sixth National Economic and Social Development Plan (1987 - 1991).

By organizing the University into schools and having 3 - 7 board members, STOU realizes the following advantages:

(1) The dividing line between schools is reduced by promoting teamwork and close collaboration among staff members. This kind of co-operation is very important for the Open University.

(2) Decisions can be made quicker since decision-making is facilitated by having a small number of board members.

(3) The board of studies is active since election is held every four years. Having the election helps assure representation of academic staff interests in decision-making.

In addition to the board of studies each school has some 5 - 11 academic assessors to advise on academic standards, curriculum development, instruction, evaluation, and educational services.

Apart from their advisory capacity, academic assessors also serve as the University's external examiners.

Academic assessors are appointed from those considered outstanding in the academic community.

2. The Management

The management of distance education at STOU can be conceptualized as consisting of the following systems: admission and registration, production, delivery, instruction, examination, and administration. Table 5 illustrates system functions and support units to carry out the respective functions.

Table 5: System Functions and Support Units

Admission and Registration System	Office of Registration, Records, and Evaluation – admitting students – registration – record-keeping
Production System	Office of Academic Affairs – preparing manuscripts for course teams – providing training for outside writers – organizing workshops for course writers Office of Educational Technology – producing radio programs – producing television programs – preparing films, audiotapes, and videotapes Office of the University Press – printing textbooks and workbooks – printing examination papers
Delivery System	Office of Educational Services – sending materials to students
Instruction System	Office of Educational Services – organizing tutorials – co-ordinating study centers – providing counselling and guidance – co-ordinating student clubs and associations Office of Academic Affairs – organizing professional experience workshops – organizing enrichment programs for graduates Office of Documentation and Information – sending materials to STOU corners – providing library services to students – co-ordinating resource centers

Table 5 (Cont.)

Examination System	Office of Registration, Records, and Evaluation – supervising exams – developing test instruments – organizing workshops for exam writers
Administration System	Office of the Rector – record-keeping – public relations – finance – personnel – planning and development – materials and supplies

2.1 Admission and Registration System

STOU admits students once a year. Normally the University opens for admission from January to April. Information and application forms are made available from January to March. During the period February to April, prospective students fill in application forms and mail them to the University. Enclosed together with their applications are postal money orders for tuition fees and course materials. Those who meet admission requirements are admitted without entrance examination.

2.2 Production System

Courses offered by STOU are arranged in blocks to provide an integrated study of interrelated subjects. Each course block is worth 6 credits. A student must take at least 1 course (6 credits) but not more than 3 courses (18 credits) per semester. A four-year program leading to a bachelor's degree requires 22 - 24 courses (132 to 144 credits).

Since opening, STOU has produced 243 new courses. The number of new courses produced for each semester is presented in Table 6.

Table 6: Number of New Courses Produced between 1980 - 1985

Academic Year	1st Semester	2nd Semester	Total
1980 - 1981	9	12	21
1982	22	30	52
1983	23	33	56
1984	29	35	64
1985	21	29	50
All totals	104	139	243

To produce course materials, STOU uses a team approach by setting up a course team. As of 1985, STOU had appointed 243 such course teams to produce course materials.

The course team consists of five categories of specialist:

(1) subject or content specialists (not more than 7 persons)
(2) media specialist
(3) evaluation specialist
(4) editor
(5) secretary

Course team members may be assigned additional tasks as editor or secretary. Experts from outside organizations and staff members of other universities whose academic achievements are outstanding are invited to be course team members and co-writers. About 1,000 qualified outsiders have served as course producers. STOU organizes an intensive workshop for them before they start writing course materials.

There are two important components in the infrastructure of the production system: one is the Educational Broadcasting Production Center and the other is the Office of the University Press.

The Educational Broadcasting Production Center, donated by the Government of Japan, is equipped with modern production equipment. The construction started in December 1982 and was completed in February 1984. The Center comprises three television program production studios and six radio program production studios together with a wide variety of other useful facilities. It is capable of producing approximately 10,000 radio programs and 2,000 television programs per year.

The Office of the University Press is the other important element in the infrastructure for the production of printed materials. The University is using its own revenue for the construction of the building – 5,169 square meters – and the provision of printing machines.

The building will be completed in 1986. At present the University has its own small print shop and relies on about 30 - 40 local printers outside the University for the printing of course materials.

As shown in Table 5, three offices are responsible for course production: the Office of Academic Affairs, the Office of Educational Technology, and the Office of the University Press. The management of the production system requires a great deal of planning and co-ordination among these three offices.

2.3 Delivery System

STOU students, who are spread throughout the country, receive all instructional materials by mail. As shown in Table 7, a large quantity of printed material is mailed to students each semester.

Table 7: Quantities of Materials Mailed to Students, 1983

Types of Material	1st Semester	2nd Semester
1. Registration materials	96,265	157,945 (copies)
2. Examination handbooks	151,335	127,903 (copies)
3. Broadcasting schedules	153,046	156,548 (copies)
4. Newsletters	960,000	822,208 (copies)
5. Instructional materials	405,188	350,221 (packages)

Table 7 shows only the major items. Other materials such as application forms and information booklets are also sent by mail. This poses a problem to postal services. To solve the problem, STOU works closely with the Communications Authority of Thailand. Successful operation of the delivery system requires planning, communication, co-ordination, and co-operation.

The Office of Educational Services is in charge of the delivery system. At present, STOU rents a warehouse to store and package materials. The University is now building its own warehouse of 7,450 square meters at its headquarters. This warehouse, which will be completed in 1986, will be an important component in the infrastructure for effective management of the delivery system.

2.4 Instruction System

Article 6 of the Sukhothai Thammathirat Open University Act B.E. 2521 (1978) prescribes the methods of instruction as follows:

> "The education provided by the University shall be given through correspondence, radio and television broadcasting or other media which will enable students to learn by themselves without having to attend classes."

To help students study on their own, STOU employs distance teaching methods featuring the following media to impart instruction:

(1) Main media: correspondence texts, textbooks, workbooks, radio and television broadcast handbooks, etc.;
(2) Support media: radio and television broadcasts, including broadcasting of video-tapes, and course materials recorded on audio cassette tapes; and
(3) tutorial and counselling sessions at various local and regional study centers throughout the country.

Since the management of the instruction system is quite complex and involves many outside agencies, considerable planning, communication, and co-ordination are needed for effective operation. The University responds to this challenge in the following ways:

2.4.1 Main media

The University sends all instructional materials to the students by mail as soon as they register.

2.4.2 Support media: radio and television

STOU broadcasts radio and television programs daily. As shown in Table 8, over 150 radio programs of 20 minutes' duration are broadcast weekly, totalling approximately 7,800 radio programs per year. As for the television programs, the University has permission from the Government to broadcast three programs daily from 18:30 - 20:00. About 1,100 television programs are broadcast per year.

Table 8: Radio and Television Broadcasts

Type of Program	Duration of Program	Number of Broadcasts
radio	20 minutes	150 programs per week (7,800 per year)
television	30 minutes	3 programs per day (1,100per year)

2.4.3 Tutorials

Tutorials are organized to provide face-to-face interaction with students. To make tutorial sessions flexible and accessible to distance learners, the University has instituted the following procedure:

(1) organizes the tutorials on Saturday and Sunday;
(2) makes tutorials optional to students rather than compulsory;

(3) holds the tutorials at local study centers close to students; and

(4) selects appropriate courses for tutorials and holds the sessions for about 10 hours per course per semester.

At present tutorials are held for about 30 percent of the courses, and about 30 percent of the students attend these sessions. The sessions are organized at regional, local and special study centers as illustrated in Table 9. Regional universities and teachers' colleges serve as regional centers. Local study centers are located in secondary schools in the provinces. They provide facilities for tutorials and also for examinations. Regional study centers help the University select local tutors in the regions.

Table 9: Regional, Local, and Special Study Centers

Regions	Regional Centers	Local Study Centers	Special Study Centers		
			Library Corners	Agricultural Extension and Co-operatives Centers	Health Science Centers
Bangkok Metropolis	3	–	3	1	5
Central Region	–	9	9	1	3
Northern Region	2	15	16	1	5
North-eastern Region	2	16	17	1	4
Eastern Region	1	7	8	1	2
Western Region	1	7	8	1	–
Southern Region	2	12	14	1	3
Total	11	66	75	7	22

2.4.4 Practical Work

It should be noted that in Table 9 there are special study centers for the School of Agricultural Extension and Co-operatives and the School of Health Science. These special centers serve as places for special tutorials and practical work. The University seeks co-operation from the Ministry of Agriculture and Co-operatives and also the Ministry of Public Health to establish these centers. For students in the nursing program of the School of Health Science, co-operation is also obtained from the Ministry of Public Health to use hospitals and health centers where STOU students are employed as centers where students may gain practical experience.

2.4.5 Guidance and Counselling

The University uses a variety of means to provide guidance and counselling to distance learners. Staff members of local study centers who work for STOU on a part-time

basis provide guidance to students who come to the centers. Group counselling is also encouraged. A half-hour meeting, normally between 08:30 - 09:00 before the start of the tutorial session, is conducted by STOU staff. In June 1985, the University organized a seminar on "Roles and Duties of Student Clubs" for the first time. About 80 students from 31 associations throughout the country attended the seminar at STOU headquarters. Student Clubs are expected to play active roles in guidance, counselling, and peer group teaching.

2.4.6 Library Services

The University seeks co-operation from the Non-Formal Education Department, Ministry of Education, to use public libraries throughout the country as STOU Corners. Educational materials produced by the University and additional reading materials are deposited at STOU Corners so that students can come for additional study. As illustrated in Table 9, there are 75 STOU Corners throughout the country.

2.5 Examination System

STOU organizes final examinations in every province every semester. Those who fail have a chance to take the examination again. In the second semester of the 1984 academic year, STOU organized examinations in 91 centers throughout the country – 13 in Bangkok and 78 in the provinces. Normally regional and local study centers serve as examination centers.

The examinations, like the tutorials, are held on Saturday and Sunday. STOU's staff bring the examination papers to the examination centers, and staff members of local schools and colleges serve as invigilators. As shown in Table 10, STOU's examination system requires a large number of facilities and invigilators. During an examination day, about 5,000 local staff members are working as invigilators. This requires a great deal of co-ordination.

Table 10: Number of Examination Rooms and Invigilators – First Semester 1984

	Saturday		Sunday	
	09:00 - 12:00	13:00 - 16:00	09:00 - 12:00	13:00 - 16:00
Number of Examination Rooms	2512	2246	2763	1978
Number of Invigilators	5024	4492	5526	3956

2.6 Administration System

This system concerns the general administration of the University and includes planning, budgeting, and finance. Some significant features in the administration of distance education are as follows:

(1) All decision-making is collective. A team approach is employed in the management of the University.

(2) As the distance education system requires a great deal of planning and co-ordination, the University puts a great deal of effort into preparing the annual operational plan. A two-day intensive workshop on operational planning is organized, and administrators from all offices and departments of the University, together with members of the Academic Senate, attend the workshop to map out the annual plan.

(3) A Planning-Programming-Budgeting-System (PPBS) has been initiated in order to ensure efficient allocation of resources for distance education.

PART III THE ECONOMICS OF DISTANCE EDUCATION

In this part, the costs of distance education are presented. Three types of cost are discussed: cost to the institution, cost to individuals, and cost to society.

1. Institutional Costs

1.1 Institutional costs from Government Budget

Generally in Thailand, government universities receive about 90 percent of their expenditure from the Government. STOU, however, receives a smaller portion. As shown in Table 11, STOU received only 0.5 percent of the total higher education budget in 1980. In 1985, this was 1.3 percent.

Table 11: Government Budget Allocated to STOU Compared with Total Higher Education Budget, 1980 - 1985

Unit = Baht

Budget Year	Total higher education budget	Budget allocated to STOU	Percentage
1980	3,475,909,500	17,731,800	0.5
1981	4,019,747,300	46,857,900	1.2
1982	4,453,835,850	55,037,800	1.2
1983	5,068,237,620	69,647,800	1.4
1984	5,215,200,000	89,573,700	1.7
1985	5,419,621,000	68,136,000	1.3

1 US$ = 27.00 Baht

1.2 Institutional Costs from University Revenue

In addition to the budget drawn from the government, STOU uses its own revenue for the operation of the University. Total expenditure from the two sources –

government budget and university revenue – is presented in Table 12. From this table it can be seen that on average about 75 percent of the total expenditure is from STOU's own revenue.

Table 12: STOU Total Expenditure from Government Budget and University Revenue, 1980 - 1985

Unit = Baht

Budget Year	Government Budget		University Revenue	
	Amount	%	Amount	%
1980	17,731,800	32.07	37,558,000	67.93
1981	46,857,900	30.76	105,840,000	69.24
1982	55,037,800	24.57	168,931,800	75.43
1983	69,647,800	21.10	260,400,000	78.90
1984	89,573,700	22.72	304,600,000	77.28
1985	68,136,000	18.32	303,808,460	81.60

1 US$ = 27.00 Baht

1.3 Institutional Cost Per Head

Operating costs per head of restricted-admission universities and open universities are presented in Table 13. From this table it can be seen that open universities have a much lower average cost. It should be noted that the open universities in this table are STOU and Ramkhamhaeng University, which is the other open-admission university.

Table 13: Operating Cost Per Head from Government Budget and University Revenue of Restricted-Admission and Open Universities by Discipline 1980

Unit = Baht

Discipline	Per Head
Restricted-Admission Universities	
1. Medical Science and Public Health	61,810.87
2. Agriculture, Forestry, and Fishery	36,718.37
3. Fine Arts and Applied Arts	28,920.36
4. Architecture and Regional Planning	22,111.73
5. Education and Teacher Training	20,507.39
6. Engineering	20,306.83
7. Natural Science	19,778.15
8. Mass Communications and Documentation	18,308.84

Table 13 (Cont.)

Discipline	Per Head
9. Mathematics and Computer Science	16,633.22
10. Others	15,208.63
11. Business Administration and Commerce	14,942.07
12. Humanities	14,332.56
13. Social-Behavioral Science	13,435.97
14. Law	11,970.81
Open Universities	
1. Business Administration and Commerce	1,695.95
2. Natural Science	972.72
3. Education and Teacher Training	638.08
4. Social-Behavioral Science	591.84
5. Law	461.34
6. Humanities	305.36

Source: Ministry of University Affairs, *Research Report on Operating Cost Per Head Fiscal Year 1980* (Bangkok 1984), Table 4, P. 25

It should be noted that the figures in Table 13 represent only operation costs. Investment costs such as those for building programs, equipment, and other infrastructure are not included. From this table it is possible to study the effects of the economy of scale. The large number of students in the open universities helps to reduce the average cost.

A comparison of operating costs per head in the same discipline is provided in Table 14. It can be seen from this table that the average cost per head per year in the same discipline is much greater in restricted-admission universities. Comparison between the two types of university system in the discipline may be made, and it may be seen that the cost of the open universities varies from 2.13 percent in Humanities to 11.35 percent in Business Administration.

Table 14: Comparison of Operating Costs Per Head between Restricted-Admission Universities and Open Universities, 1980

Unit = Baht

Discipline	Type of University		Percentage
	(1) Restricted	(2) Open	
1. Business Administration and Commerce	14,942.07	1,695.95	11.35
2. Natural Science	19,778.15	972.72	4.91
3. Education and Teacher Education	20,507.39	638.08	3.11
4. Social-Behavioral Science	13,435.97	591.84	4.40
5. Law	11,970.81	461.34	3.85
6. Humanities	14,332.56	305.36	2.13

2. Private Costs

Personal costs to be borne by students are as follows:

2.1 Expenses for tuition fees and study materials

Expenses for fees and study materials charged by the University are:

(a) Admission fees (single payment on entering)	150 Baht
(b) University fees per semester	150 Baht
(c) Tuition fees per course	200 Baht
(d) Educational materials per course	200 Baht

Educational materials include textbooks, workbooks, and recorded cassette tapes. All of these materials are mailed to students homes.

On average students take two courses per semester. The full load for students is three courses. If a student in the two-year program takes three courses per semester and passes all courses, he will take two years to obtain his bachelor's degree. His expenditure may be as presented in Table 15.

Table 15: Student Expenditure on Fees and Materials in the Two-year Program

Unit = Baht

Types of Expenditure	1st Year		2nd Year	
	1st Semester	2nd Semester	1st Semester	2nd Semester
1. Admission fees	150 Baht (5.6 US$)	–	–	–
2. University fees	150 Baht (5.6 US$)	150 Baht (5.6 US$)	150 Baht (5.6 US$)	150 Baht (5.6 US$)
3. Tuition fees (3 courses)	600 Baht (22.2 US$)	600 Baht (22.2 US$)	600 Baht (22.2 US$)	600 Baht (22.2 US$)
4. Educational materials (3 courses)	600 Baht (22.2 US$)	600 Baht (22.2 US$)	600 Baht (22.2 US$)	600 Baht (22.2 US$)
Total	1,500 Baht (55.6 US$)	1,350 Baht (50 US$)	1,350 Baht (50 US$)	1,350 Baht (50 US$)

All totals = 5,550 Baht (205.6 US$)

From the table it can be seen that a student who takes a full load and passes all final examinations spends 5,550 Baht for tuition fees and materials throughout the program. The average income of students in 1984 was about 3,500 Baht per month (Appendix 5). The student thus spends about 6.6 percent (5,550 : 3,500 × 24) of his income for University expenses.

2.2 Personal Expenses

Personal expenses are composed of the following:

(a) Travel expenses for tutorial sesions, final examinations, and intensive workshops and training.

(b) Other expenses, such as costs of make-up examinations and sending letters and requests to the University.

As STOU provides tutorial sessions, final and make-up examinations in every province, travelling expenses are minimal.

3. Opportunity Costs

There are no opportunity costs or foregone earnings. STOU students are generally in full employment and contributing to the GNP of the country.

In fact, STOU has helped to reduce social costs. For example, in 1985 there were some 90 convicts enrolled with STOU. With the co-operation of the Department of Correc-

tion, Ministry of the Interior, the University provided distance education to these people. Graduates of this program are expected to function as good citizens and thus the program will be of real benefit to society.

Conclusion

From the previous discussion about STOU, the following conclusions may be drawn:

1. STOU has been in operation since 1978. Through flexible design the University has been able to extend educational opportunities to people in all walks of life, especially those in remote areas.

2. Learners in the distance education system need a flexible curriculum structure. STOU has provided both degree and non-degree programs. Short courses, such as those provided in Certificate programs, the Certificate of Achievement program and Associate Student programs, are offered in order to meet the demands of individuals and agencies for personal and professional development.

3. Adult learners need flexible learning schedules. The multi-media approach helps to meet these needs. Tutorials are optional and held on Saturdays and Sundays. Examinations are also organized on weekends at local study centers. These arrangements are necessary for successful teaching at a distance.

4. Existing facilities and resources are necessary for distance education. As students are spread throughout the country, existing local facilities and resources have to be utilized for the benefit of students. STOU has maximized the use of these facilities, such as secondary schools, teachers' colleges, hospitals, health centers, agricultural stations, and public libraries. Human resources, such as businessmen, lawyers, bankers, and nurses, are recruited as part-time tutors.

5. Flexible learning systems of distance education require efficient management systems. The management of distance education at STOU is conceptualized as consisting of different integrated systems: admission and registration, production, delivery, instruction, examination, and administration. Each system requires sound planning, communication, co-ordination, and co-operation. It also needs appropriate infrastructure.

6. From STOU's experience, the cost of providing distance education seems to be less expensive than in restricted-admission universities. The economy of scale helps to reduce the average institutional cost. Costs to society are also less as taxpayers contribute only about 20 percent of the total institutional costs. Also, students themselves are adult workers and do not, therefore, forego their income. Costs to the students themselves are less as they study at home.

APPENDIX 1: PERCENTAGE DISTRIBUTION OF NEW STUDENTS BY SEX

School	1980 - 1981		1982		1983		1984	
	Male	Female	Male	Female	Male	Female	Male	Female
1. Home Economics	–	–	0.9	91.1	0.7	99.3	1.2	98.8
2. Law	–	–	91.2	8.8	82.9	17.4	85.6	14.4
3. Communication Arts	–	–	–	–	–	–	40.2	59.8
4. Political Science	–	–	–	–	76.6	23.4	78.9	21.1
5. Management Science	98.2	1.8	46.5	53.5	40.9	59.1	35.6	64.4
6. Health Science	–	–	46.7	53.2	29.4	70.6	15.9	84.1
7. Educational Studies	46.6	53.4	43.3	56.7	41.8	58.2	42.9	57.1
8. Economics	–	–	67.7	32.3	56.5	43.5	56.3	43.7
9. Agricultural Extension And Co-operatives	–	–	89.0	11.0	81.9	18.1	78.1	21.9
All Schools	50.8	49.2	67.2	32.8	55.7	44.3	50.9	49.1

APPENDIX 2: DISTRIBUTION OF NEW STUDENTS BY AGE

Age	1980 - 1981		1982		1983		1984	
	Number	%	Number	%	Number	%	Number	%
17 - 22	4,171	5.4	5,849	8.4	10,090	20.1	20,176	23.7
23 - 25	19,626	25.5	13,601	19.6	12,094	24.1	21,812	25.7
26 - 30	27,195	35.4	19,963	28.7	12,292	24.5	21,517	25.3
31 - 35	12,358	16.1	13,982	20.1	6,573	13.1	10,297	12.1
36 - 40	6,946	9.1	8,540	12.3	4,051	8.1	5,650	6.6
41 - 50	4,674	6.1	4,972	7.1	3,090	6.2	4,026	4.7
51 - 60	713	0.9	651	0.9	424	0.9	491	0.6
over 60	73	0.1	66	0.1	22	0.1	45	0.1
No response	974	1.3	1,937	2.8	1,476	2.9	1,027	1.2
Total	76,730	100.0	69,561	100.0	50,112	100.0	85,041	100.0

APPENDIX 3: DISTRIBUTION OF NEW STUDENTS BY AGE
(Average and Median)

School	1980 - 1981		1982		1983		1984	
	Mean	Md	Mean	Md	Mean	Md	Mean	Md
1. Home Economics	–	–	26.92	25	25.79	24	25.03	24
2. Law	–	–	32.50	31	31.07	30	29.98	28
3. Communication Arts	–	–	–	–	–	–	24.77	23
4. Political Science	–	–	–	–	26.08	24	26.37	24
5. Management Science	33.00	31	27.86	27	25.97	24	25.66	24
6. Health Science	–	–	30.97	30	28.20	26	29.05	27
7. Educational Studies	29.20	27	28.80	27	28.37	26	28.15	27
8. Economics	–	–	28.44	27	25.10	24	24.57	23
9. Agricultural Extension And Co-operatives	–	–	29.49	28	26.87	25	26.83	25
All Schools	29.50	28	30.27	29	28.15	26	27.37	26

APPENDIX 4: DISTRIBUTION OF NEW STUDENTS BY OCCUPATION

Types of Occupation	1980 - 1981		1982		1983		1984	
	Number	%	Number	%	Number	%	Number	%
Government Service	68,984	83.98	48,457	69.66	29,739	59.4	46,978	55.2
State Enterprise	942	1.15	5,457	7.84	2,953	5.9	4,787	5.6
Private Sector Employment	6,552	7.98	9,659	13.89	7,069	14.1	12,961	15.2
Private Business	275	0.33	1,438	2.07	2,183	4.4	3,463	4.1
Agriculture	43	0.05	89	0.13	567	1.1	924	1.1
Others	57	0.07	932	1.34	1,621	3.2	4,949	5.8
No employment	5,286	6.44	3,529	5.07	4,260	8.5	8,803	10.4
No response					1,720	3.4	2,176	2.6
Total	82,139	100.00	69,561	100.00	50,112	100.0	85,041	100.0

APPENDIX 5: DISTRIBUTION OF NEW STUDENTS BY MONTHLY INCOME

Monthly Income	1980 - 1981		1982		1983		1984	
	Number	%	Number	%	Number	%	Number	%
Under 1,000 Baht	526	0.7	1,683	2.4	3,623	7.2	1,265	1.5
1,001 - 2,000 Baht	14,097	19.6	8,144	11.7	6,793	13.6	9,698	11.4
2,001 - 3,000 Baht	42,452	55.5	24,054	34.6	16,089	32.1	26,694	31.4
3,001 - 4,000 Baht	12,561	16.4	16,300	23.4	9,006	18.0	12,918	15.2
4,001 - 5,000 Baht	4,280	5.6	7,675	11.0	4,807	9.6	6,844	8.0
5,001 - 6,000 Baht	1,024	1.3	4,035	5.8	2,476	4.9	3,150	3.7
6,001 - 7,000 Baht	573	0.8	2,199	3.2	1,571	3.1	2,192	2.6
Over 7,000 Baht	–	–	3,457	4.9	2,392	4.8	3,268	3.8
No response	45	0.1	2,014	2.9	3,355	6.7	19,012	22.4
Total	82,139	100.0	69,561	100.0	50,112	100.0	85,041	100.0

*APPENDIX 6: PERMANENT STAFF MEMBERS**

School	Educational Level		Total
	Doctor's degree	Master's degree	
1. Home Economics	1	8	9
2. Law	2	13	15
3. Communication Arts	–	2	2
4. Political Science	3	4	7
5. Management Science	1	15	16
6. Health Science	–	9	9
7. Liberal Arts	3	14	17
8. Educational Studies	14	15	29
9. Economics	2	7	9
10. Agricultural Extension and Co-operatives	2	12	14
Total	28	99	127

* As of June 30, 1985

*APPENDIX 7: PERMANENT ADMINISTRATIVE STAFF**

Office	Educational Level			Total
	Associate or lower	Master's degree	Bachelor's degree	
1. Office of Registration, Records, and Evaluation	49	7	21	77
2. Office of Educational Technology	85	29	62	176
3. Office of Educational Services	27	10	22	59
4. Office of Academic Affairs	45	6	21	72
5. Office of the Rector	57	4	42	103
Total	263	56	168	487

* As of June 30, 1985